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Connecting local and global food for sustainable solutions in public food procurement

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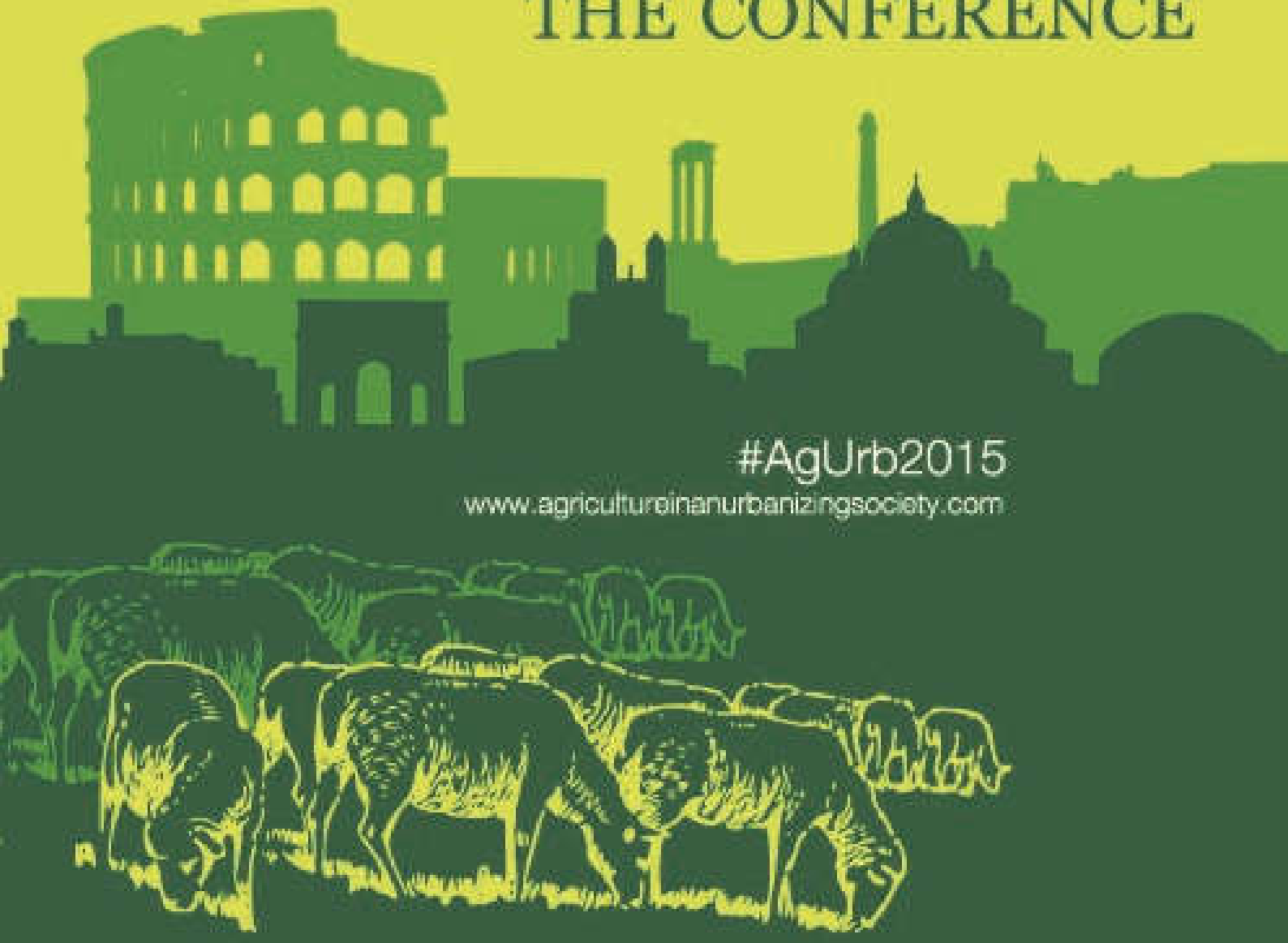
Second International Conference on

AGRICULTURE IN AN URBANIZING SOCIETY

Reconnecting Agriculture and Food Chains to Societal Needs

14 - 17 SEPTEMBER 2015 | ROME | ITALY

PROCEEDINGS OF THE CONFERENCE



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Reconnecting Agriculture and Food Chains to Societal Needs

14-17 September 2015 Rome Italy

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Conference theme

In May 2007, a major demographic milestone was passed. For the first time, the earth's population became more urban than rural. This process of urbanization will accelerate in the decades to come: most of the growth in the world population – to 9 billion people in 2050 – will occur in urban areas. By 2050, the urban population will be approximately twice the size of the rural population.

However, this does not mean that urban areas are or will become more important than rural areas. On the contrary, they have always relied heavily on each other, and will become even more mutually reliant during an era of rapid urban population growth. Cities will continue to need resources such as food, fibre, clean water, nature, biodiversity and recreational space, as well as the people and communities that produce and provide these products and services. Hence, key questions for the coming decades are how, where and by whom these products and services for the urban area will be produced and provided, and if and how this can be done in a manner that is considered to be socially, economically and ecologically sustainable and ethically sound.

In recent years, multifunctional agriculture has emerged as an important topic in debates on the future of agriculture and the rural area and its relations with the wider and predominantly urban society. This is an expression of the fact that agriculture is not only valued for its contribution to food and fibre production and the economic development of agro-industry, but that it also needs to be assessed according to a much wider range of social, environmental, economic and ethical criteria. At the farm level, multifunctional agriculture is characterized by a variety of entrepreneurial strategies and activities, such as processing and direct marketing of food products, energy production, care for the elderly and disabled and tourism. In the first conference on Agriculture in an Urbanizing Society, this was the main focus.

Developments go fast: there is a growing interest among people living in urban environments in the origin of our daily food and in the development of short, recognizable sustainable food chains. Moreover, we see a growing number of local initiatives of local food production in urbanized areas. Besides local food production for consumption, the focus of these initiatives is on the effects of growing local food on health aspects, social cohesion and education. Although urban food production is growing both in the North and the South, drivers for this differ. With a loss of connection between consumption and production being one of the important drivers in the North, and the direct access to fresh healthy food being an important driver in the South. Based on these developments, the focus of the **second conference on Agriculture in an Urbanizing Society** has shifted towards ***Reconnecting Agriculture and Food Chains to Societal Needs***.

Research on this topic demands a multidisciplinary approach. Hence this conference aims to advance the scientific state of the art in research on multifunctional agriculture, local food chains and urban-rural relations by bringing together scholars from a wide range of disciplines (sociology, economics, spatial planning, land-use planning, regional planning, urban planning, crop sciences, animal sciences, soil sciences, architecture, etc.) from many parts of the world.

The Conference will be part of the programme that the Latium Region is organizing in connection with the EXPO 2015 "Feeding the planet energy for life" that will take place in Milan, Italy from 1st of May to 31st of October 2015.

Conference Chair opening speech

Dear conference participants,

On behalf of the scientific programme committee and the local organising committee of the 'Agriculture in an Urbanizing Society' Conference, I welcome you in the city of Rome and the Roma Tre university which hosts this conference.
In 2012 we organized the first international conference on Agriculture in an urbanizing society in Wageningen to stimulate exchange of ideas, visions and concepts between scientists from a broad range of disciplines on the topic of multifunctional agriculture and urban – rural relations. The challenges arising in these domains demanded to our view a multidisciplinary approach. The conference proofed to fulfil a need, more than 250 scholars participated in the conference. There the seed was planted for an international multidisciplinary network of scholars committed to address questions on how food in an urbanizing society can or should be organized in such a manner that the system is socially, economically and ecologically sustainable and ethically sound.
This second conference in Rome proves that it was not a temporary occasional topic or community: our network has grown with over 370 participants from more than 60 countries participating in this conference showing that the topic is of global interest.
The topics we discussed the first conference are still of importance today with focus on both the urban side of food (urban agriculture, public food procurement, planning for food) and on the rural and agricultural aspects (entrepreneurship, business models, ecosystem services, carefarming etc.). New topics have emerged on connecting the urban and the rural like short food supply chains and connecting global and local food systems. Finally there are a range of new topics which have an integral focus underpinning the development towards multidisciplinary research in this field. Working groups on food system transitions, city food regions and food system and planning explore the multidimensional system aspects and ask for integration of the different disciplines we represent during this conference.
I wish you a very inspiring conference and enjoyable stay in Rome!

Dr. Andries Visser
Chair of the conference programme committee

Conference Programme

Sunday, September 13

16.00-19.00 Registration

18.00-19.30 Meeting of the Working Group Convenors

Monday, September 14

08.00-12.00 REGISTRATION

09.00 WELCOME

Prof. Mario Panizza - Rector of Roma Tre University
Ignazio Marino–Major Roma Capitale
Sonia Ricci – Councillor for Agriculture Lazio Region

09.30 OPENING PLENARY SESSION

Welcome by the Chair of the Local Organization Committee
Prof. Gianluca Brunori - Chair of the Local Organizing Committee

Agriculture in an urbanizing society: what are the main issues?
Dr. Andries Visser - Chair of the Scientific Programme Committee

Meeting urban food needs through inclusive and sustainable food systems
Dr. Ren Wang - Assistant Director-General, Agriculture and Consumer Protection Department, FAO

10.30 COFFEE/TEA BREAK

11.00 PLENARY KEYNOTE LECTURES

Reclaiming society-urban-agrifood relations: assembling insights from New Zealand's recent experience
Richard Le Heron, Professor of Geography, School of Environment, University of Auckland (New Zeland)

Food Strategies: what next? Perspectives from emergent economies, Brazil
Sergio Schneider, Professor of Rural Sociology and Development Studies, Federal University of Rio Grande do Sul, Porto Alegre (Brazil)

12.30 LUNCH

14.00 PARALLEL WORKING GROUP SESSION 1

15.30 COFFEE/TEA BREAK

16.00 PARALLEL WORKING GROUP SESSION 2

Tuesday, September 15

09.00 PARALLEL WORKING GROUP SESSION 3

10.30 COFFEE/TEA BREAK

11.00 PARALLEL WORKING GROUP SESSION 4

12.30 LUNCH

14.00 PLENARY KEYNOTE LECTURES

Entrenching food policy in cities: how it looks from the trenches
Wayne Roberts, Food policy analyst, writer, food activist, Chair Toronto Food Policy Council from 2000-2010 (Canada)

The path to the perfect food
Carlo Alberto Pratesi, Professor of marketing, innovation and sustainability, University Roma Tre; Scientific Advisor of the Barilla Center for Food & Nutrition BCFN (Italy)

15.30 COFFEE/TEA BREAK

16.00 PARALLEL WORKING GROUP SESSION 5

19.30 CONFERENCE DINNER

Wednesday, September 16

09.00 PLENARY KEYNOTE LECTURES

Agroecology an ethics of life
Pierre Rabhi - Writer, farmer, philosopher, expert in agroecology; United Nations expert for the development of the Arid Lands; Founder of Association Terre et Humanism and the Movement Colibris (France)

10.30 COFFEE/TEA BREAK

11.00 PARALLEL WORKING GROUP SESSION 6

12.30 LUNCH

14.00 PLENARY SESSION

Round table Food security in an urbanizing society
Chair: Gianluca Brunori
Moderator: Makiko Taguchi
Participants: * Walter Belik (Brasil) * Erik Mathijs (Belgium) * Roberta Sonnino (UK) * Juliet Kiguli (Uganda) * Ye Jingzhong (China) * Richard Le Heron (New Zealand)

Prizegiving speech: Award for best revolutionary practical solutions (free admission)
Chair: Francesco Di Iacovo (Italy)
Introductory speech: * Pierre Rabhi (France) on Research, civil society and policies, their role in promoting innovation and its (rapid) spread. * Paola Scarpellini (Italy) Innovation brokerage and new paths for change: spaces of actions and barriers.
Prizegiving speech: * Winners AiCARE Award 2015

18.00 APERITIF AND PRIZE FOR BEST SCIENTIFIC PAPERS

Thursday, September 17

09.00 PLENARY SESSION

Debat: Food in the city in the International context. Institutions, organizations and other protagonists (free admission)

Chair: Gianluca Brunori

* Maurizio Martina (Italian Minister of Agriculture) to be confirmed.

* Gianluca Brunori (Scientific Committee) The Rome's 2nd International Conference on Agriculture in an Urbanizing Society: emerging issues, questions and themes.
Round table, participants: * Marta Leonori (Councillor for Roma Produttiva e Città Metropolitana) * Andrea Calori (Milan Food Policy Team) * Luca Ruini (BCFN Food For Sustainable Growth) * Claudio Mazzini (Coop Italia) to be confirmed * Guido Santini (FAO Food for the Cities) * Farmers' Associations (Vincenzo Vizioli - AIAB Associazione Italiana per l'Agricoltura Biologica, Francesca Rocchi - Slow Food Italia, Dino Scanavino - CIA Confederazione Italiana Agricoltori to be confirmed, Roberto Moncalvo - Coldiretti to be confirmed), * International experiences (Camilo Lozano Torres - Universitá di Rio Grande do Sul Brasil, Heidrun Moschitz - FIBL Switzerland, Wayne Roberts – Chair Toronto Food Policy Council from 2000-2010).

* Nicola Zingaretti (President of Lazio Region)

09.00 EXCURSIONS

Reserved at registration

Proceedings collected by Working group

WG1 - Connecting local and global food systems and reducing footprint in food provisioning and use

WG2 - Short food supply chains (regional products; farmers' markets; collective farmers' marketing initiatives; alternative food networks; CSA)

WG3 - Economic impact at the farm level

WG4 - New business models for multiple value creation

WG5/WG16 - Entrepreneurial skills and competences, knowledge and innovation systems and new learning arrangements; Gender aspects of multifunctional agriculture

WG6 - Transition approaches

WG7 - Regional branding and local agrifood systems: strategies, governance, and impacts

WG8 - Food systems and spatial planning. Towards a reconnection?

WG9 - Land-use transformations

WG10 - Urban agriculture I. Urban agriculture and Urban Food Strategies: Processes, Planning, Policies and Potential to Reconnect Society and Food

WG11 - Urban agriculture II. Grass-root initiatives and community gardens

WG12 - Urban agriculture III: Effects of UA. Urban agriculture: a potential tool for local and global food security, economic, social and environmental resilience, and community health and wellness

WG13 - Care Farming/Social Farming in more resilient societes

WG14 - Rural tourism (agri-tourism) and changing urban demands

WG15 - Local arrangements for agricultural ecosystem services: connecting urban populations to their peri-urban landscapes through the ecosystem services of agriculture

WG17 - Civic agriculture for an urbanizing society: production models, consumption practices and forms of governance

WG18 - Society Oriented Farming – working on the balance between market and societal demands

WG19 - Food Security: Meanings, Practices and Policies

WG20 - Revolutionary solutions for local food systems

WG21 - Urban forestry, Green infrastructure

WG22 - Food System Transitions: Cities and the Strategic Management of Food Practices

WG23 - Conceptualising and Assessing City Region Food Systems

WG24 - Revaluing institutional food procurement

WG25 - Postharvest Aspects of Local Food Supply Chains of Urban Centres

WG1 - Connecting local and global food systems and reducing footprint in food provisioning and use

The growing influence of global food value chains has raised concerns about the sustainability of food systems. Food production and consumption have large impacts on various sustainability issues such as climate change, water use, soil quality, biodiversity, etc. To take just one example, in an urbanizing society more and more food needs to be transported to urban centres. At the same time, urban areas are producing larger amounts of organic and sewage waste that need to be processed and transported away from cities. Until now the cycle of organic material and its constituent compounds like phosphorus and nitrogen is far from closed. The current urban food cycle is causing accumulation, environmental pollution, and depletion of resources such as phosphorus.

Growing out of such concerns, vibrant food movements have developed a radical critique of global food operations. These have influenced both consumers and policy makers, who then exert pressure on actors in the food chain to address this issue. One of the strategies to challenge Global Value Chains has been the relocalisation of food systems, opposing 'short' with 'long', 'local' to 'global', and 'different' to 'standard'. It is claimed, in fact, that local food systems reduce food miles, foster direct communication channels between consumers and producers, increase biological and cultural diversity, enlarge consumers freedom of choice, and re-balance the power of big players.

In response, many larger food businesses have started to address the sustainability issue seriously, investing in technologies, measurement tools, certification schemes, social reporting, and so forth, to improve their sustainability performance, and to conquer 'minds and hearts' of consumers.

At the same time, research has addressed the conceptual limits of relocalisation, raising the concern that localizing food markets may not yield greater efficiency in economic or energy terms. For example, is it more defensible to produce tomatoes in a nearby greenhouse heated with fossil fuels, or to import them from open fields in a warm climate? Is preserving and storing local products for off-season use more desirable than importing fresh products? Should "local" be defined in kilometers, or in terms of the social and commercial networks that are inherent to community-based food trade?

The working group will accept papers addressing these questions:

- *How is the sustainability performance of food systems evolving? What theories, measurements, and assessment tools are being developed to quantify their performance? Case studies quantifying the effects of sustainability performance are welcomed.*
- *To what extent are local or global food networks able to keep a high social innovation profile and contribute to sustainable consumption and production? What are the more promising experiences? What are the limits of their action? Are hybrid structures feasible that combine elements of local and global?*
- *Are there avenues for collaboration between food movements and global players in the pursuit of sustainable production and consumption? What are the barriers? What are the risks of collaboration?*
- *What role might community food networks play in the building of new food-system organizational patterns? Will the agriculture of the future be defined by corporate and institutional structures, or can it remain rooted in communities?*
- *What kind of instruments or information could help decision makers to make the best choices?*
- *How can policies accompany the efforts of actors in the food chains to improve their sustainability performance?*

Convenors

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Connecting local and global food for sustainable solutions in public procurement

Anne Nymand-Grarup, Katarzyna Gradziuk, Niels Heine Kristensen[1]

***Abstract* - In this article complexities connected to development and implementation of policies enhancing sustainable public food procurement are discussed. The discussion is based on the analysis of twoschool meal arrangements identified as "local" and "global"with regards toa share of local and global food purchased. The qualitative data(semi-structured and structured interviews)was gathered in relation to Work Packages 3 and 4 of the EU project "GLAMUR: a multidimensional performance-based approach".Based on gathered data as well asliterature review and analysis of documentation, the critical issuesfor assessment of sustainability of the two cases were identified. Next, a comparison between them was conducted usinga multidimensional performance-based approach. According to the results of conducted analysis the "local" school meal arrangement performed better in economic and nutritional dimension of sustainability. Based on the results possibility of including and implementing new criteria of sustainability in the public procurement are discussed.**

***Keywords* – sustainable public food procurement, local food, organic food, school food, performance-based approach**

INTRODUCTION

The aim of this paper is to discuss complexities connected to development and implementation of policies enhancing sustainable public food procurement. Since the public procurement is characterized by multi-level governance (Morgan, Sonino, 2006) its objectives and solutions at each level (EU, national, regional/local) should be taken into considerations.

Sustainability of public diets in Denmark has been on the agenda since the 1990's as a part of a sustainable food strategy. The special attention to the public procurement of food was given in the environmental collaboration between several Danish municipalities, which aimed at supporting sustainable development (Dogme, 2000). The municipalities decided that public procurement of food was obliged to achieve at least 75% organic food (measured in volume) by 2015.It was expected that this goal would be met within existing budgets and would comply with the existing nutritional recommendations (Nordic Nutrition Recommendations, 2012; Fødevarestyrelsen, 2013). This objective was partly supported by the governmental strategy of development of public catering as market for organic food (Foodlinks, 2011; Ministeriet for Fødevarer, LandbrugogFiskeri, 2012).

A growing interest in including morelocal food in the public procurement has subsequently occurred. In 2013 the project "Wise Food Procurement" (KlogeFødevareindkøb) was implemented. It aimed at advice and support for procurement agents in municipalities, regions and the state with regards to purchase of organic and local food. The project should lead to collaboration along the value chain as well as enhance interdisciplinary skills (Madkulturen, 2015). Although the goal of the project focused on increasing both organic and local food in the public procurement so far no goals regarding share of local products in public procurement were defined.

Increasing share of local food in the public procurement is also restricted by EU legislation. Due to the free market rule EU regulations on public procurement limit possibility of giving preference to suppliers based on their location. However, the recent reform of the EU regulations on public procurement aims at providing higher degree of flexibility in constructing and executing tenders. It introduces concrete measures to remove barriers for small and medium-sized enterprises (SMEs) to access the system of public procurement. They include easier tender procedures and higher degree of flexibility in divisions of contracts into smaller parts; at the same time turnover of companies interested in participating in tendering process will be limited to a maximum of double the estimated contract value. All these should result in easier access to the public procurement system and create growth possibilities for SMEs in the food sector.

Whereas new EU regulations aims at certain degree of decentralization of tendering process, at the national level the counter tendencies - towards more centralized procurement – have been observed. The above mentioned changes reflect complexities of the public procurement of food which influence possibility of including various criteria of sustainability in the public procurement of food.

Analysis of case studies of two school meal arrangements in Denmark is the point of departure for considerations about thevarious criteria of sustainability to be included in the public procurement. The results of analysis revealed the need for including sustainability criteria that go beyond solely environmental dimension.

METHODS

For the purpose of the study two Danish school meal arrangements: "local" and "global" were identified (based on the share of local and global food in the total purchase). The methodology applied for assessmentof their sustainability was developed within the framework of EU GLAMURproject: "Global and local food assessment: a multidimensional performance-based approach". Data collection was done by means of semi-structured and unstructured interviews with relevant stakeholders, systematic literature review as well as desk based research.

Based on the collected data, the key attributes ("affordability", "competitiveness/ profitability", "governance", "information and communication" and "nutrition") and critical issues connected to different

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dimensions of sustainability of the food procurement were identified.The critical issues included: possibility of: 1) providing affordable school meal and 2) including more local products in the public procurement; 3) organic transition in the public kitchens; 4) availability of data of the origin of food; 5) focus on food literacy; 6) nutritional aspect of sustainability of a public diet and 7) role of public procurement in improving competitiveness of small and medium size enterprises.

Next, the relevant indicators connected to the key attributes of the public diets were proposed and applied to the performance assessment of bothof the analysed cases.

RESULTS

The results of the performance assessment revealed that the "local" case performed better with regards to degree of flexibility in choosing the suppliers, data accessibility (and transparency) on the origin of food, focus on food literacy, inclusion of sustainability criteria in the nutritional recommendations, involvement of children in the process of meals production as well as barriers for SMEs to enter the procurement. Both cases performed equally well with regards to mission explicitness, requirements regarding share of organic food, presence of organic labelling scheme and existence of nutritional goals for the meals.

DISCUSSION AND CONCLUSION

Based on the results it was stated that the "local" case was better able to address various criteria of sustainability. Although, the "local" school meal arrangement was not a part of the public procurement,some of the sustainability criteria applied in it could serve as an example of good practices.

When discussing objectives of public procurement of food and its sustainability there is a need to consider various issues such as including more local food as a mean to strengthen the competitiveness of the local SMEs. Another important issue that should be reflected on is a possibility of including sustainability criteria in the nutritional recommendations.

The limited flexibility of the global diet results from the public procurement regulations. Assuming that greater degree of flexibility of choice of suppliers allows for more efficient use of resources, the policy recommendation would be to make the regulations less strict. Although this problem is addressed by the new EU regulations, in Denmark there is a tendency towards more centralized public procurement, which might lead to even more limited choice of suppliers for the kitchens.

ACKNOWLEDGEMENT

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Resources uses objectives and the constitutional processes in SPGs

Martino G., Pascucci S., Stefanini M.[1]

***Abstract* – This study aims at contributing to the knowledge of Solidarity Purchasing Group (SPGs) organizational dimensions, a field that allows the group to carry out its activities and to achieve its outcomes, but that was only partially considered in literature. SPGs organize food provision by seeking to achieve specific objectives along these dimensions. SPGs provide their members with food in a context of direct contact with the producers, sharing ethical and sustainable approaches to the production process and resource uses. In this context, the objective of this study is to investigate the constitutional organizational processes setting up a group. The organizational constitutional processes establish the group and allow it to undertake the food provision and the achievements of further, food related objectives. The empirical results indicates that the resources uses ranking influence the group members practices.**

***Keywords* – Solidarity Purchasing Groups, constitutional processes, economic crisis**

INTRODUCTION

This study aims at contributing to the knowledge of Solidarity Purchasing Group organizational dimensions. The organization allows the group to carry out its activities and to achieve its outcomes, but that was only partially considered in literature (Brunori et al. 2012). Beyond the food availability, SPGs organize food provision by seeking to achieve specific objectives in terms of health, environment and ethic outcomes associated to food (Renting et al. 2003). In this context, the objective of this study is to investigate the constitutional organizational processes setting up a group(Grandori, 2010). The organizational constitutional processes establish the group and allow it to undertake the food provision and the achievements of further, food related objectives. The resources ranking with respect to the potential uses is central to constitution of the organization. To this purpose we elaborate on the concept of resources uses objetives as the instrument of the resources ranking withing the group.

In order to carry out its activities an SPG owns and manages several resources. The group is endowed with codified and tacit knowledge about the production and consumption technologies.The group itself is also engaged in knowledge creation. Furthermore it establishes relationships with other public and private entities, including the national level SPGs network.

These relationships allow the group to tackle further knowledge and also to develop its political capability.

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The group also manages small amount of financial resources gathered at member level. Sometimes local public authorities grant the resources to support logistic activities. The producers own both material and immaterial resources: land, equipment, financial capital, labour and knowledge.

According to Grandori (2010)as constitutional process we intend a sequence of actions undertaken and decisions made aimed at establishing an organization, whatever are the nature and the goals of the organization. Key constitutional steps are the pooling of the resources owned by the parties, the distribution of the decisions rights and the rank the parties assign to the resources uses. Provide the role of food practices (Fonte, 2013), the specific research question we addressed whether or not the resources uses objectivesinfluence the group members food practices.

METHOD

In order to address the research questions carried out a small survey by submitting a questionnaire to 25 groups in Central and North Italy and 6 accepted to submit the questionnaire to their members. The instruments included several set of questions. Beyond the individual characteristics, we considered characteristics related to the activities:Membership (from < 1 year to >6 years); Frequency (from 1 time week to 1 time/year); Change perceived (var participants, products); Percentage of Expenditure at SPG;Typefood (Bread, Pasta, Cereals, Chees&Eggs, Olive oil, Wine, Meat&Fish); Marketplace (Local Supermarket, Ipermarket,Harddiscount, Traditional shop, Other). We then considered several types of resources uses objectives: to seek to pay a low price (LOWPRICE); to protect the environment (ENVINRPROT); to select the producers (SELECT); to act according to ethic reasons (ETHICREAS); to purchase food without pesticide residuals (NOPESTIC); to purchase healty food (HEALTH); to contribute to the local economy (LOCALECON); to have some right to decide the production technology (DECRIGHTS); to protect the biodiversity (BIODIVERS); to transform the local society (TRANSFORM). The economic crisis triggered several changes also in the food practices.

Therefore we also considered further resources uses objectives: to safe money in food purchasing (SAVING); to increase the amount of home prepared food (HOME); to reduce the fraction of monthly expenditure allocated to the food (LOWEXP); to purchase genuine food, provided the risk that a reduced price may entail lower quality and safety (SAFEFOOD); to seek to reduce the waste (WASTERES). We asked the respondents to rank these potential resources uses objectives by a Likert scale from 1 to 6.

We analysed the data by Multidimensional Scaling and achieved a bidimensional representation of the the group members interviewed. The we explained the

dimensions achieved in terms of resources uses objectives.

RESULTS

We administrated the survey online and gathered 53 valid answers. We carried out the Multidimensional Scaling analysis excluding the resources uses objectives variables. The Figure 1 illustrates the resulting configuration by two dimensions (selected by the Stress function: 0.201).

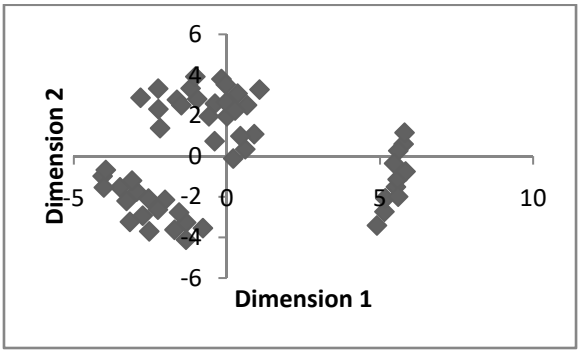

Figure 1. Multidimensional scaling configuration

It is evident that the characteristics considered allows to discriminate the respondents. Taking into account that the variables used concerns with the individual activities (see Par. Method), we conclude that three clear sets of individuals can be identified in terms of activities or in other words of individual food practices (Fonte, 2013).

In order to explain the dimensions identified we estimated a General Linear Model for each dimensions using the resources uses objectives as covariate. The results are shown in Table 1. We consider the variable which are statistically significant. In the case of the dimension 1 we found out that the variables SELECT and EXP_Change have a negative effect, while BIODIVERSITY and TRANSFORMATION have a positive sign. In the case of the dimension 2 LOWPRICE, DECRIGHTS, HOME and SAFEFOODS are significant and positive, while LOCALECON has a negative sign.Our interpretation is that:a) the resources uses objective influence the food practices in the SPGs;b) the individual sampled are interested to biodiversity and local society transformation, but the change they experienced tend to constrain this interest; these individual do not select producers;c) the right to take decisions about the production process an the seek for low prices are associated with practices changes caused by the economic crisis and reduction of interest for local economy.

DISCUSSION

The study considers the constitutional processes as basic part of Solidarity Purchasing Group set up. A key point of these processes is the resources uses ranking (Grandori, 2010). The paper then explicitly refers to the theory of organization to investigate aspects of SPGs not often considered.

The innovation of the theoretical approaches in the analysis of the SPGs appears promising. The results shows that that the empirical analysis support the idea that the resources uses objectives influence the group member practices and the allows one to discriminate the members.

Table 1: Interpretation of the Dimensions - Generalized Linear Models

	Dimension1		Dimension2	
	Coef.	P>z	Coef.	P>z
LOWPRICE	0.48	0.22	0.4	0.1
ENVIRPROT	0.17	0.72	0.61	0.21
SELECT	-0.85	0.01	-0.48	0.18
ETHICREAS	-0.28	0.6	-0.51	0.26
NOPESTIC	-0.02	0.97	0.48	0.35
HEALTH	-0.82	0.24	0	1
LOCALECON	-0.24	0.69	0.94	0.07
DECRIGHTS	0.29	0.31	0.57	0.04
BIODIVERS	0.81	0.05	-0.54	0.14
TRANSFORM	0.6	0.06	-0.41	0.17
SAVING	-0.28	0.42	0.33	0.25
HOME	0.01	0.98	-0.68	0
LOWEXPEND	0.12	0.77	0.09	0.73
SAFEFOOD	0.21	0.56	-1.05	0
WASTERED	-0.31	0.48	0.35	0.27
EXP_Change	-3.13	0	0.41	0.48
_cons	3.34	0.11	0.46	0.59

The results then combine the Rural Sociology and the Theory of Organization both because the explaingin resources use are coherent with the drivers of SPGs (Brunori et al, 2012; Renting et al,, 2003) and because of the connection between the resources uses and the food practices.

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Sustainable food supply chains: A social-ecological analysis of the food supply in Viennese Schools

Jana Wettstein[1]

***Abstract* – The study follows the debate on how communal feeding in public facilities, such as Viennese schools, can contribute to an ecologically sustainable society. We address this debate by the means of the theoretical framework of social metabolism. We shed light on the organizational and socio-economic structures of lunch provisioning systems in Austrian compulsory schoolings and we analyse the bio-physical dynamics of these systems by using material flow analyses. We ask whether and how school food supply systems might be able to source mainly locally and organically produced food and whether and how this would contribute to a more sustainable school food system. The results show that there is enough arable and organically certified land in Vienna and Lower Austria to provide the products needed for Viennese school meals at public compulsory schoolings. The paper sets out strategies (such as organic and local cultivation of food staples, short and optimized transport routes, reduced meat consumption and reduced food waste) that might help to create a more sustainable school food provisioning system. These strategies might serve as guidelines for a more sustainable public procurement policy and contribute to a more sustainable metabolism.**

***Keywords* – Social Metabolism, Sustainable Food Supply Chains, Public Food Procurement, School Food**

INTRODUCTION

It is recognized that the expanding metabolism of society endangers local and global sustainability and is a major driver of global environmental change (Krausmann et al., 2007). The paper asks whether and how food procurement in public Viennese schools might contribute to a more sustainable metabolism.

The paper assumes that schools are socioecological systems which are in constant interaction with natural systems (Fischer-Kowalski, Haberl; 1993). To provide school meals they extract raw materials out of their natural environment and therefore change it. These material flows are quantified and examined. The paper discusses the potential contribution of communal feeding in Viennese public compulsory schoolings for driving public procurement in a more sustainable direction. Often practitioners argue that the lack of arable land (as well as high prices) impedes sourcing locally and organically produced food. The paper assesses if there would be sufficient arable land in Lower Austria and Vienna to provide enough locally and organically produced food for Viennese public compulsory schooling.

METHODS AND DATA

The legal and organizational landscape of communal feeding in Austrian public compulsory schoolings was mapped. Data was gathered by means of literature reviews, document analyses, telephone interviews and qualitative interviews.

We calculate how and what kind of annually biomass the system (i.e. *Viennese public compulsory schoolings*) needs. Biomass encompasses all material that is taken by humans and livestock. For gathering that information material flow accounting and analysis (MFA) was used. The data was compiled from nutrition tables, weekly school menus, expert interviews and the Austrian government report of agriculture. A hypothetical average meal was created.

The mass (m) of the components of the created average menu was multiplied with the number of eating pupils (p) and the schooldays (d):

$$Input\ (t) = m \times p \times d$$

The type and amount of animal feed needed for the animal products was calculated with data from studies from Wirsenius (2000) (Type of fodder) and Smil (2000) (Amount of fodder per kilogram live weight).

RESULTS

Socio-economic dimension

The number of children eating in schools is rising and expected to increase due to the changing living and working structures in Austria (Höhmann et al., 2005).

The study shows that the organizational structure (socio-economic structure) has an impact on the biophysical structure: Viennese schools formulated a strict catalogue of criteria for caterers providing school food. This catalogue has a high influence on the type of materials entering the school feeding system. For example, 40% of the used products must be organically grown and the school meals must meet certain nutritious standards (ÖGE-Gütesiegel).

Biophysical dimension

Biomass flow

Per school year (2014/15) about 10.500 tons of biomass is required to provide midday meals in public compulsory schoolings in Vienna. Approximately 2050 tons actually end up on the pupils plates: 1580 tons of plant-based dish constituents (vegetables, grains, potatoes, rice, fruits, oils and fats) and 470 tons of animal-based dish constituents (poultry, beef, pork, fish, milk products).

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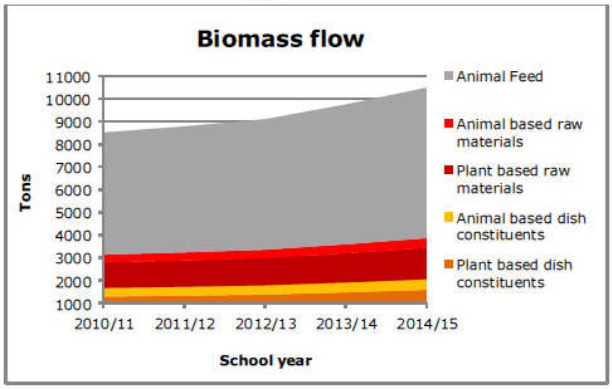

Figure 1: Biomass flows in school years 2010-2015

For providing these dishes around 3000 tons of plant-based and around 900 tons of animal-based raw materials are necessary. For the delivered animal products nearly 6.650 tons of animal feed is needed. The results show that around 400 tons of leftover food gets wasted annually.

Relocalization

Table 1. Needed organic land area and organic livestock production in %

Products	*%needed*
Vegetables	2,18
Grains	1,25
Roots, Tubers, Oil Crops	4,97
Fruits	15,02
Grass-Legumes	3,21
Dairy Products	0,94
Poultry	116,8
Beef	2,10
Pork	1,92
Fish	no data

As Table 1 illustrates, it becomes obvious that – except for organic poultry production – it would be possible to source the bulk of biomass locally and organically – when it comes to availability of land area and organic livestock production. However looking at the overall poultry production (conventional and ecological) in Lower Austria and Vienna, only 5,67% would be needed.

DISCUSSION

Schools must extract raw materials from their natural environment to provide daily lunches. Decisive for a school's metabolism are the mode of production of the used materials (organic, local, seasonal) and the consumption patterns within schools (type of diet, wasted food). The consumption of animal products strongly influences the biomass material flow: approximately 70% of the biomass flow going into the school system is biomass associated with an animal-based diet. Thus, the reduction of meat consumption would foster a more sustainable school feeding system. Reducing food losses and food waste would be another step towards improving food security and increase the efficiency of resource use.

Furthermore, we assume that the metabolism of schools could be more sustainable if all the biomass would be sourced organically and locally, since local organic farming is considered of having less negative impacts (soil erosion, biodiversity, pesticides ect.) on the environment and would reduce food miles (Fritsche, Eberle; 2007). As the results show, the argument of a lack of sufficient arable land is not substantial. However, in order to supply the catering industry with affordable local and ecological products, adjustments and changes in relation to current food purchasing systems would have to take place.

The creation of short and optimized transport routes and contracts with local farmers is essential. Schools could have the potential of promoting sustainable consumption and production patterns, in particular with respect to food procurement and it's environmental, social, ethical, economical, educational and health related impacts.

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An education project to promote healthy and sustainable food consumption. Barilla's "Sì.Mediterraneo" Project

Luca Fernando Ruini, Laura Marchelli, Valeria Rapetti, Marta Bianchi, Eleonora Vannuzzi, Marta Antonelli, Sonia Massari and Ludovica Principato[1]

***Abstract* – As part of its business strategy "Good for You, Good for the Planet", the Barilla Group has put forth since 2011 the educational project "Sì.Mediterraneo", with the twofold purpose of improving Barilla employees' well-being and increasing their awareness on the environmental impacts of their food consumptions. The initiative began in 2011 in the two company cafeterias at the Barilla Group headquarters in Pedrignano (Parma), and in 2013 it became a global commitment of the Group. The scientific basis on which the project relies is the Double Pyramid model promoted by the Barilla Center for Food and Nutrition. Canteen menus were modified to be sustainable from an environmental perspective and balanced from a nutritional point of view. Carbon, Water and Ecological Footprint have been used to assess and communicate the environmental impact of the menus proposed. Results show that nutritional messages do have a significant influence on employees' eating choices. From environmental point of view, the activity led to significant reduction of greenhouse gases emissions, water use and land ecosystem use. In Pedrignano canteen alone, the project has allowed savings of 65kg of CO_2-eq every day, as well as 40m^3 of water and 1000m2 of Ecological Footprint per day.**

***Keywords* – Mediterranean diet, ecological footprint, sustainable food consumption.**

INTRODUCTION

Since 2011, the Barilla group has been carrying out "Sì.Mediterraneo", an educational project aimed at increasing well-being in employees and raising their awareness on the environmental impacts of their food choices. This project is part of the business strategy "Good for You, Good for the Planet". The project has two purposes. First, to increase awareness about the benefits of the Mediterranean diet and also to increase knowledge about the relationship between food choices and environmental impacts. This aim isaccomplished through an educational program on the principles of the Double Pyramid model promoted by the Barilla Centre for Food and Nutrition.

The second aim is to improve the eating habits of Barilla employees through nutritional education, modifying the company canteens menus to offer them a wider range of healthy foods, in line with the dietary principles of the Mediterranean Diet.

METHODS

The project has been developed in cooperation with the Department of Clinical and Experimental Medicine of the Federico II University of Naples.The initiative started in 2011 at the headquarters of the Barilla Group in Pedrignano (Parma). It was then extended to all plants in Italy and in the USA. In 2013 the project became a global commitment of the Group, and it has been extended to Barilla's plants and offices in Europe (Germany, Sweden, Norway, Greece, Turkey, France), Asia (Singapore, China, Japan), Australia, Brazil and Canada.

Canteen menus were created to be sustainable from an environmental perspective and balanced from a nutritional point of view, containing the correct proportion of calories, fibers and saturated fatty acids. The Double Pyramid model has been used to reform the menus in all the company's canteens around the world. The Double Pyramid is a tool that classifies food product depending on their nutritional value and environmental impact (Fig 1).

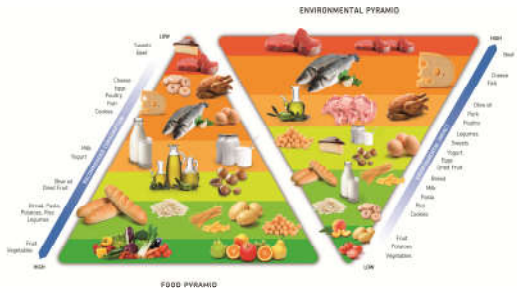

Fig 1. The BCFN Double Pyramid

The Model shows that foods which consumption should be limited have a high environmental impact, while the ones that should be eaten in greater quantity have a low environmental impact (Barilla Centre for Food and Nutrition 2014). The traditional Mediterranean Diet has been adapted depending on the geographic areas it has been promoted, in order to enhance the food diversity and the culinary traditions of the various countries.The Ecological Footprint, i.e."a measure that accounts or the flows of energy and matter to and from any defined economy and converts these into the corresponding land/water area required to nature to support these flows" (Wackernagel & Rees 1996), has been used to assess and communicate the environmental impact of the menus proposed.

The canteen has been adorned with informative posters and other notices (Fig 2). The information focused on the nutritional value of the Mediterranean Model, the importance of calorie balance for weight

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maintenance, the promotion of unsaturated healthy fats, and the environmental impacts of different food choices. Informative materials were distributed into the eating spaces, in order to procure the employees with a proper knowledge about the importance of achieving a sustainable low-carbon diet, both from a health's perspective and from an environmental point of view.

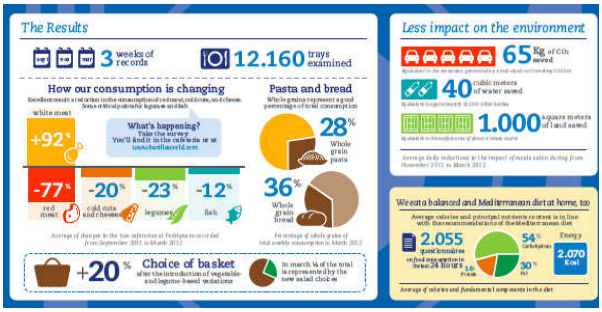

Fig 2. Informative material used in Barilla's canteens

The impacts generated by the adoption of the programme in terms of greenhouse gases emissions, water use and land ecosystem use have been assessed through the development of a specific instrument, "Tool Chef", developed by Life Cycle Engineering (LCE), an independent research and consulting company based in Turin that specializes in LCA assessments. Tool Chef is a tool that relates the environmental and the nutritional impacts of over 1,500 recipesthat operates on a database managed directly by LCE making process and control data to enable a simplified usage, immediate, and verified.

RESULTS & DISCUSSION

Pedrignano canteens consumptions have been monitored during three weeks between 2011 and 2012. Overall 12,160 meals were recorded. Results show that nutritional messages do have a significant influence on employees' eating choices. In two months the consumption of whole grain pasta doubled.The consumption of whole grain bread increased significantly (+40%). Consumption of fruit and vegetables has remained quite high and stable. Results showed also a negative trend in the consumption of red meat (-77%), while the white lean meat consumption hiked (+60%).

The activity translated also in a significant reduction of the greenhouse gases emissions, water use and land ecosystem use. In Pedrignano canteen alone, it has been assessed that the project led to a saving of 65kg of CO_2-eq every day for the Pedrignano canteen, as well as 40m^3 of water and 1000m^2 of Ecological Footprint per day.

At the end of the project, the participantswere asked to take a survey toassess the experience and its effects.Among the main results from the morethan 600 surveys collected, over 80%said they were satisfied with the initiativeand 50% of the total samplingwas very or very, very satisfied with theproposal.

The project has demonstrated the effectiveness of educational activities performed in the workplace for influencing positively employees' food choices. Combining the use of immediate and understandable graphic tools with engaging educational activities and balanced canteen menu proposals, it is possible to increase the well-being of people through a proper nutrition, while contributing to safeguard the environment.

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Assessing the degree of localness of food value chains

Schmitt E., Barjolle D., Six J.[1]

***Abstract* – In a context of increased consumers' demand for local food, the distinction between local and global still remains fuzzy. Apart from the food-mile concept, no metrics exist to quantify the level of "localness" of a food product. This study aims at providing a more inclusive and relevant framework for assessing "localness" of food chains. In this study, five domains of distinction are defined: geographical distance, chain length, supply chain size, identity and governance. These criteria are assessed for two case studies in the Swiss cheese sector: a global and a local cheese. The global cheese is more global for all criteria, though mostly for the last three qualitative criteria. This study shows that the studied value chains have a high level of interconnections and the proposed framework has the advantage oftaking this flexibility into account. Further evidence on other commodities would be necessary to generalise its use as a tool to assess the degree of localness of food value chains.**

***Keywords* – local food, global food, cheese, food supply chain.**

INTRODUCTION

Local food is a current trend among consumers, food specialists and academics. However what is meant by "local" is unclear and often associated with more sustainability. This assumption has been called the "local trap" by Born and Purcell (2006).

So far, empirical studies have mostly focused on the consumer side (Carroll and Fahy, 2014) or the case of farmers' markets but little evidence from the production and retail side exist. Even fewer are the studies that consider the whole value chain from production to consumption. The case studies presented here have the goal to present a holistic evaluation and thus consider the whole value chain. A definition of value chains is given by Kaplinsky and Morris (2000) and applies as well for the food sector: "the value chain describes the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers, and final disposal after use."

The overall goal is here to test a method and analytical framework that can allow evaluating the feasibility of discriminating local versus global food value chains.

METHODOLOGY

The first step constituted in defining and describing criteria that can be used to distinguish local from global food value chains. The criteria were defined using references to scientific literature and are presented in the results section. The second step consisted in analysing two case studies in relation to these criteria. The two case studies were chosen in order to observe the differences between one more global cheese (Gruyère) and one more localcheese (Etivaz).

The difference between these chains lies mostly in their scale as Gruyère is the most produced cheese in the country when Etivaz has a pro-duction around 70 times smaller (Federal Office for Agriculture (FOAG), 2013). Both are produced under Protected Designation of Origin (PDO) specifications, with a much larger zone of production in the case of Gruyère and more traditional cheese-making techniques for Etivaz, which is produced in summer on alp pasture.

For each chain, data was collected through semi-structured interviews with actors in the food value chains (FVC) and experts and through literature and media review (book of requirement, official websites, news articles …).The approach has the goal to be participatory in the sense that interviews also helped to identify the relevant criteria and let actors reflect on local and global aspects of their position in the FVC.

RESULTS

Scientific literature (Edwards-Jones, 2010; King et al., 2010;Dunne et al., 2011) indicate that geographical distance is the most relevant distinction between local and global FVCs. Distance is related to the concept of food miles, that is widely spread in the discussion on local food (DuPuis and Goodman, 2005). In the case studies, the Weighted Average Source Distance formula was used as a way to evaluate distances (Carlsson-Kanyama, 1997). This calculation reflects the total kilometres the ingredients travel in proportion of their weight in the final product and can be used in the case of cheese.

As there are more criteria relevant to the distinction of local food than distance, other criteria are evaluated on both case studies.

The second one concerns food chain length. The number of hands in which the product passes before reaching the consumer forms a path length in social network terminology (Hanneman and Riddle, 2005). Two criteria can thus be assessed concerning the value chain's length: the number of intermediaries in the value chain (from production to place of sale) and the proportion of direct sales done by the producer at production place or a dedicated place.

The size of the supply chain is directly used as a criteria in the study by King et al. (2010) comparing local and mainstream food supply chains, using the main measure of sales volumes.

The third criteria used (size) thus includes the volumes produced, the number of actors and the number of suppliers per factory.

Considering identity (fourth criteria), the two criteria of distinction identified are qualitative aspects relating to the skills used for production and processing and to the final identity related to the product.

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The first concerns the knowledge and technologies employed as local know-how. The second is to assess how the product identity relates to the territory of production, such as with a name as reference to the place or with a legal protection of the name and identification through PDO or Protected Geographical Indication as used in Carbone et al. (2014).

The identity of the product is also forged by the actors in the supply chain. The values attached to the product and the supply chain management will depend on the decision-making mechanism and power structures which constitute the governance of the chain.

Governance includes the rules and conditions of participation into the value chain's activities (Ponte and Gibbon, 2006). This can for example include the rules for quality or techniques that only a few actors might be able to apply, the quantities limitation, price, etc. The degree of control of local actors on the value chain thus constitutes the last criteria.

All these criteria were analysed on both value chains and it appears that local cheese identified is more local in all of these criteria. The difference is the biggest concerning the identity and size of the value chain.

Discussion and Conclusion

The results show a high level of hybridity for the two cheeses. The criteria defined in this paper allow identifying which aspects are rather local or global in a value chain and to compare several value chains. The degrees calculated are an indication of scale and local embeddedness, but are not a synonym of sustainability.

Food value chains are actually often complex networks with multiple channels that operate both at the local and global scale. The analysis in this paper identified criteria that are crucial to consider assessing the degree of localness of commodities.

As illustrated in the case of two cheese value chains, adopting an inter-disciplinary perspective, by combining the food-miles concept for the calculation of distance and more qualitative aspects such as governance and identity, allows assessing a holistic level of lo-calness.

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The irresistible rise of craft breweries in Italy: the case of agricultural craft breweries

Matteo Fastigi, Roberto Esposti, Elena Viganò[1]

***Abstract* – This paper investigates the emergence of microbreweries in Italy during the period 1993-2014. The rise of the craft brewing sector can be interpreted as a consequence of a change in the beer market in Italy (a traditionally wine-producing country), combined with a strongly growing demand and an increasing general attention of consumers to production quality and geographical origin. The Italian microbreweries have been taking advantage of being identified, by the consumers, as local and craft: however, even if the majority of their turnover is achieved within the region in which their production site is localized, raw materials (cereals) largely come from abroad still. But the new typology of the agricultural brewery, on the contrary, may represent a more sustainable way of production.**

***Keywords* – Microbreweries, agricultural beer, beer industry, craft beer.**

INTRODUCTION

The *craft beer revolution*, which started in the United States in the 1970s, was the grass-roots answer to a highly concentrated beer industry run by only a few 'giant brewers', as well as to the standardization and homogenisation of the product (Tremblay *et al.*, 2005). This revolution led to the rediscovery of old, tastier and more flavourful beers, as well as to an enormous increase in the number of producers, from only 43 breweries in 1983 – the lowest ever (Swaminathan, 1998) – to 3,464 in 2014, of which 3,418 were craft breweries[2].

Even more surprising, however, is the fact that this phenomenon has not stayed limited to within the U.S. borders: recently, in Italy, the number and popularity of the craft brewing sector have been growing at the same speed (see Table 1).

Furthermore, Italy may be the first country in which the typology of the 'agricultural craft brewery' was born, at the end of 2010. Following the Ministerial Decree no. 212, a brewery can benefit from this appellation if it produces at least the majority of the barley used in its beer production (this kind of brewery is a full-fledged agricultural firm). The advantages do not only refer to the label[3], but also to a different tax regime to which they are subject and to the possibility of running for the European Agricultural Fund for Rural Development**.** By the end of 2014, there were 72 agricultural craft breweries.

This paper will analyse the factors which induced this unexpected change in the Italian beer market, in order to understand whether the phenomenon was generated and led by localized factors. Next, the paper will address the provision of raw materials, which are often of foreign origin, therefore causing the issue of environmental sustainability.

Table 1. No. of craft breweries in Italy (1996-2014)

	1996	2003	2010	2014
Craft Breweries	16	95	326	754

Source: Elaboration on www.microbirrifici.org.

METHODOLOGY

The research was carried out using survival analysis models, in order to understand if local factors may facilitate craft breweries' entrance into (or exit from) the market. The sample is composed of all 754 craft beer producers that entered – and exited from – the market from 1993 to 2014, corresponding to the whole population of craft brewers.

Additionally, a questionnaire was sent to all the craft beer producers operating in the market at the end of May 2014 (604 observations), to obtain information on the background of these craftsmen, their reasons for having chosen this particular activity and the origin of the raw materials used in production.

RESULTS OF THE RESEARCH

The survival analysis models show that local factors, although not crucial, can influence the birth and the development of this sector in Italy. For example, in a particular province, a higher unemployment rate, a greater proportion of employees engaged in the food industry and a higher concentration of craft breweries in that area may negatively influence the decision to enter the market, just as in regions like Lombardy, Emilia-Romagna, Tuscany and Marche, the propensity to enter the market is lower because there is already a large number of craft beer producers there.

On the other hand, the only factors reducing the probability of exiting from the market are the number of beers produced and the ability to survive in a competitive environment in the first years of activity. Regions such as Lombardy, Emilia-Romagna, Tuscany, Piedmont and Umbria, because of strong growth rates in the sector in recent years, may show congestion effects in those areas, driving some producers to exit from the market.

What strongly emerges from the survey is the lack of previous working experiences in the beer/wine/spirits industry. 75% of respondents had never worked in one of these sectors before starting the production of beer, and 75% were homebrewers for various time-spans before enter the market (40%

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2 In 2014, the craft beer sector accounted for 11% of all U.S. beer sales by volume (www.brewersassociation.org).

3 Because of the M.D. 212/2010, they can indicate their status of 'birrificio agricolo', whereas all the other craft breweries – the vast majority – cannot indicate the phrase 'birrificio artigianale' or 'birra artigianale' in their labels; in fact, the Italian law forbids any artisanal firm to take advantage of its craft characteristic for presenting its products as superior on a quality level.

of total respondents had been homebrewers for 5 years or more). Furthermore, 52% of respondents had a high school degree, 34% an academic degree and 42% of the craft brewers responded that they started producing craft beer because they wanted to turn a passion into a job.

Finally, the fact that there is an issue regarding producing the beer but not the cereals locally, is proved by the survey, since an average of 70% of the (malted) cereals used in the production were purchased abroad[4].

COMMENTS TO THE RESULTS

The survival analysis shows that localised factors only affect the risk of exit from (or entry into) the market. What has been really decisive, in a country like Italy where the major beer tradition derives from the former domination of the Austrian Empire in the XIX century, is the change in consumers' preferences, as has happened in recent food movements such as alternative food networks (Brunori *et al.*, 2012) and the urban agriculture movement (Cockrall-King 2012).

This is even clearer from the fact that the producers were homebrewers before: they did not become craft brewers because of a particular *milieu*, but because they were mostly beer lovers and eager to learn from websites and handbooks in their free time, what De Solier (2013) calls "knowledge productive leisure".

Regarding the possibility of growing and malting barley locally, more than 80% of barley cultivation in Italy is for feeding livestock (Fontana *et al.*, 2005), showing an unexploited space for planting barley for beer production (in fact, Italian production of malting barley is largely insufficient at the moment[5]). Apart from the recent opening of the "Consorzio Italiano di Produttori dell'Orzo e della Birra" (called COBI), a micro malt house in the Marche region that malts barley conferred by its members (mostly agricultural craft breweries), the production of malting barley has always been localized in the southern part of Italy, near the only two industrial malt houses. However, following the boom of the Italian craft brewing sector in the last decade, the realization of regional supply chains, as COBI did, might add value both to final products and to raw materials.

CONCLUSIONS

It is highly surprising that there exists such low variety in the types of malt produced and traded worldwide (34 in total), indicating that there is a potentially profitable economic space for micro malt houses which, linked to specific *terroirs*, might produce "smaller batches of grain with special characteristics" (Olsson *et al.*, 2009: 8), especially for craft brewers. Indeed, the role of the State has been significant in the birth of agricultural craft breweries in Italy, and further tax incentives may favour the research and development of new varieties of Italian malted barley, "making truly local beer possible" (Anderson L., 2013).

Finally, sustainable food production systems play a major challenge for the European Union, therefore the creation of a national supply chain, from the cultivation of barley to its transformation into malt, would head in the right direction.

4 "Looking at the brewing industry, it is evident that malt has turned into a global bulk commodity. Only a handful of malt houses serve the needs of the beer industry and small scale brewing is almost solely carried out with malt imported from either Germany or UK" (Olsson *et al.*, 2009: 7).

5 www.assobirra.it.

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Global, Regional and Local food chains: an assessment of sustainability performance of wheat-to-bread chains across Italy and the UK

Francesca Galli, Julie Smith, Gianluca Brunori, David Barling[1]

***Abstract* – A growing number of consumers are concerned with the impacts of consumption choices. Local food supply chains are increasingly being discussed for their potential to overcome the impacts of global and more industrialized chains. However, opposition between local and global food systems is being questioned and distinctions are ambiguous. Can sustainability performance be assessed in relation to local and global food chains? This paper develops a comparative assessment of wheat-to-bread supply chains. Key attributes are selected to collect data for measuring the performance of supply chains along the global-local continuum within five sustainability dimensions. Using a participatory approach, the research explores stakeholders' perspectives on sustainability of these chains and assesses the contribution of supply chains of different lengths towards sustainability objectives. The most relevant attributes and the relations (correlations and trade-offs) between them are highlighted. The analysis sheds light on sustainability performance and the participatory assessment reveals conflicting perceptions of sustainability and how this is perceived along the local-global continuum.**

***Keywords* – sustainability assessment, wheat-to-bread chains, UK, Italy**

INTRODUCTION

There are a growing number of consumers concerned with the impacts of their consumption choices, including how choice affects their health, society, and the environment. Local food supply chains are considered by policy and decision makers in government, industry and civil society organizations for their potential to overcome the impacts of global and more industrialized chains (Forssell and Lankoski, 2014; Selfa and Qazi 2005). Opposition between local and global food systems is being questioned and distinctions can be ambiguous (Hand and Martinez, 2010). How does sustainability performance vary in relation to food supply chains along the global-local continuum? What characterizes difference?

Within the EU 7FP Glamur project, distinctions between local and global supply chains are articulated based on: geographical distance; governance and organization; resources, knowledge and technologies and territorial identity. From this assessment, global, regional and local wheat-to-bread supply chains were selected for case study research in Italy and the UK.

Key attributes were identified and indicators were selected in order to measure the performance of the supply chains along the global-local continuum within five sustainability dimensions (economic, social, environmental, health and ethical).

This paper develops a comparative assessment of the wheat-to-bread supply chains. Using a participatory approach, the research process entails exploration of stakeholders' perspectives on the sustainability of local and global bread supply chains and assessment of the contribution of supply chains of different lengths towards sustainability. Then we identify key factors and the relations (correlations and trade-offs) between them. Finally we highlight cross-cutting issues between the sub-sets across Italy and the UK and emerging thematic questions and priorities for further in-depth investigation.

METHODOLOGY

The assessment is based on a selection of attributes drawn from scientific literature and media analysis (Kirwan et al. 2014), preliminary quick scans of the case studies and discussion between the Italian and UK teams. These attributes cover issues associated with wheat provenance and seed breeding and wheat growing priorities and practices; issues associated with product composition and nutritional value; others that cover the (re-) use of traditional baking techniques versus industrial production; and product marketing, including information communicated to the consumer.

Each attribute was linked to more than one of the five performance dimensions (economic, social, environmental, health, ethical).

Once the attributes had been selected, constructing the indicators (Table 1) involved:

i) reviewing the evidence and identifying critical points/possible indicators that highlighted important aspects for identifying differences/similarities between local-global chains;

and

ii.) using the SAFA list of indicators (FAO 2013) and the list compiled by GLAMUR project partners to guide this selection.

This followed the requirement to select comparable qualitative and quantitative performance indicators to cover the five dimensions and ensure key stakeholders were involved at every stage of the chain.

Table 1 – Selected attributes and indicators

Attributes	**Indicators**
Biodiversity	locally adapted wheat varieties and breeds
	on farm eco-system management at national level

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Technological innovation	innovation to reduce GHG emissions
	innovation to reduce waste reduction and disposal
	metrics in place to support sustainable packaging
	use/re-use of traditional production processes and preservation of local knowledge
Nutrition	salt content
	fat content
Information	communication between stakeholders along chain
	availability of information to consumers

RESULTS

UK and Italian bread chains operate almost at opposite polarities. The industrial chain accounts for 80 percent by volume of production in the UK whereas artisanal bakeries account for 90 percent of production in Italy where industrial bread is used as a substitute product.

The nature of the wheat-to-bread chains in each country has resulted in different governance issues along the chains, reflecting political, cultural and place-specific priorities. This was perhaps most demonstrable in the regional chains. Bread remains culturally important in Italy where typicity, localness and quality recognition are reinforced by highly valued PDO designations, use of ancient wheat varieties etc. In the UK, where the regional chain is retailer-driven with processes scaled-up for commercial operations within the supermarket structure, the performance shared more aspects with industrial-scale and market-led production.

Although perceptions of 'global' and 'local' differed between countries and between stakeholders in the various chains, and there were varying perceptions and definitions for each attribute, initial research identified some cross-cutting issues. For example, although the indicators for the attribute biodiversity performed better for the regional and local chains in both countries (reflecting the effects of subsidies, in part), delivering biodiversity (environmental performance) versus productive output (economic performance) was also a cross-cutting issue. This reflects tensions in both countries between practices that address territorial and farm-based distinctiveness with market-led growth strategies that prioritise food availability and affordability.

Technological innovation was also a major cross-cutting issue but, likewise, there were a variety of definitions and perceptions according to stakeholders' positions in the three supply chains (industrial versus re-(use) of traditional techniques and innovations). For nutrition performance, salt reduction was a cross-cutting issue in the global chains and reflects how the industry has reacted to pressure from public health concerns and consumer awareness, but it was harder to make robust comparisons at the local and regional levels because of different baking traditions and cultural preferences between the two countries. Regarding information and communication, marketing strategies predictably reflected the different scales of operation in both countries; the more global chains had sophisticated websites and powerful communication campaigns, supported by promotions within supermarkets and on-line shopping sites. This enabled them to adapt key marketing messages as consumer habits and concern with healthy diets become more prevalent. Without this scale of financial investment, staff and scale of operation, the situation was different at the local levels where individual stakeholders (farmer, miller, baker) had significantly fewer marketing resources and relied on promoting quality attributes through word of mouth and, increasingly (and perhaps less predictably), through social media which is proving an effective way of engaging more widely with younger consumers in particular.

CONCLUDING REMARKS

Priorities for further in-depth investigation include: how socio-economic and socio-cultural 'lock-in' affects the ability of the wheat-to-bread chains to adapt and innovate along the global-local continuum; and more detailed investigation of how the chains are 're-balancing'. Is innovation at the regional level significant? Are both chains meeting somewhere in the middle?

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Promoting sustainable durum wheat production in Italy: the Barilla Sustainable Farming project

Ruini L. F., Ronchi C., Ferrari E., Meriggi P.[1]

***Abstract* – Since the year 2010, the Barilla Company, a leading player in pasta market worldwide and one of the top Italian food companies, has implemented a project that is aimed to increase both the environmental and economic sustainability of durum wheat production. Wheat is used in over 95% of the company's products. The project introduced an integrated approach to wheat production, which mainly included an accurate planning of crop rotations and the use of a decision support system. The Barilla Sustainable Farming model was applied on 13 farms in 2011/2012 and 22 farms in 2012/2013, in the areas where durum wheat cultivation is more significant in Italy. Results show that low input agronomic practices are environmentally friendly (-36% GHG) and increase net income of farmers (up to 31%). A decision support system contributes in reducing carbon footprint (-10%), and costs for pesticides and fertilizers (- 10%).**

***Keywords* – sustainable agriculture, wheat cultivation, decision support systems.**

INTRODUCTION

In order to enhance the sustainability of its products, Barilla has assessed the environmental impacts of its supply chains using the LCA methodology. Considering that many studies revealed that the agricultural phase of food products has relatively high environmental impacts, a specific study was conducted to determine whether different crop rotations could aid in increasing the sustainability of the whole process (Caporali et al., 1992; Tilman et al., 2002). The results showed that durum wheat cultivation is responsible for more than 80% of the ecological footprint, for the entirety of the water footprint, and it has the same carbon footprint impact of the home cooking phase (Barilla, 2010; British Standard Institute, 2011; World Resources Institute, 2010). Due to this reason, Barilla put forth a specific project aimed at increasing the widespread use of sustainable cropping systems of durum wheat.

Analysis was based on a holistic approach, taking into consideration economic, agronomic, food safety and environmental indicators. The project focused on identifying potential improvements of the most diffused cropping systems for the cultivation of Durum wheat, while maintaining high levels of quality and health standards. The project started in 2010 and in the following years, it was developed in different phases and extended to other countries in which Barilla is present.

METHODOLOGY

Firstly, the Company put in place theoretical studies on durum wheat cultivation in Italy and the evaluation of environmental impacts and of overall agriculture efficiency through the use of economic, social and environmental sustainability indicators. Various types of crop rotation and agronomic practices were compared and tested during several years.

In 2010-2011 Barilla analysed a sample of farm to compare real data from farms with optimal values to obtain sustainable productions. It was shown that rotation of durum wheat with dicotyledons is more sustainable than rotations only with cereals and monoculture, and also that a reduction in production costs is possible with a better efficiency in the use of inputs. The results were reported in a *Handbook for sustainable cultivation of durum wheat*, which provides practical suggestions to farmers.

In a second phase, the project was extended to verify if an accurate planning of crop rotations and the use of a Decision Support System (DSS) could increase the sustainability of the cultivation process. The test was conducted in several farms located in the most important areas for durum wheat cultivation in Italy. Farmers were provided with the *Handbook* and *granoduro.net*™, a DSS developed by Horta S.r.l, one of the partner of this project, that integrates information on weather patterns, soil conditions and varietal characteristics and allows the optimization of seeding, fertilization, weed control and disease management.

Previous crops were divided into groups (favorable, neutral, unfavorable), depending on their influence on durum wheat cultivation. For each rotation, a comparison was made between the cultivation of durum wheat with and without the use of the DSS.

Durum wheat cultivation in Italy was relegated to three main areas: Northern, Central and Southern Italy (Ruini et al., 2011). In 2011-2012 the project was extended to about 15 farms to demonstrate that an accurate planning of crop rotations and the use of a decision support system as *granoduro.net*™ could help in being more sustainable, both environmentally and economically. In this part of the project the DSS was given to the farmers to help them following the suggestions of the Handbook for the sustainable cultivation of quality durum wheat in Italy. In 2012-2013 the sample involved in the last crop year was supplemented with new farms (around 100) situated in areas that were not considered initially.

The indicators used to quantify the different cropping system impacts were divided into environmental indicators (carbon footprint, water footprint and ecological footprint), agronomic indicators (NUE), food safety indicators (DON index) and economic indicators (Net income) (Ewing et al., 2010; Rahimizadeh et al., 2010; Hoekstra et al., 2011; Mekonnen and Hoekstra, 2010).

RESULTS

Results show that a favourable previous crop contributes in reducing significantly the greenhouse gas emissions (up to - 36% equivalent to -0,21 t CO2-eq/t grain) and the production costs (up to - 31% equivalent to -57€/t) compared to an unfavourable one.

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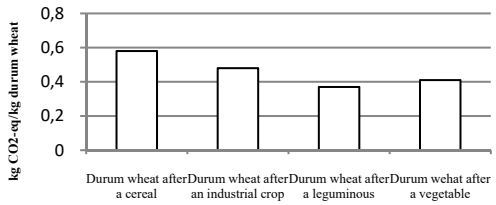
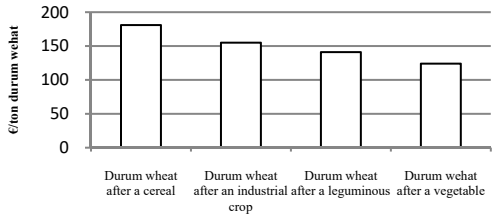
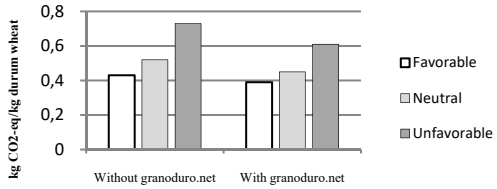


Carbon footprint of durum wheat cultivated after different crops



Production costs of durum wheat cultivated after different crops

A favourable previous crop contributes also in obtaining a significantly higher yield (up to +20% equivalent to +1,3 t/ha) compared to an unfavourable one. The use of *granoduro.net*™ contributes in further reducing carbon footprint (-10%) and to decrease direct production costs up to -10%, mainly thanks to the optimization of pesticides and fertilizers management.



Carbon footprint of durum wheat cultivated with and without the DSS granoduro.netTM.

The main innovation consists in demonstrating the importance of an integrated approach to implement sustainable cropping systems. It has been shown that environmentally friendly practices are often also economically advantageous because they increase the efficiency of technical tool usage and the yield. The project has also highlighted the importance of technical instruments such as the DSS *granuduro.net* to help the farmers in their decisions. With this kind of support is it possible to significantly reduce production costs and the related environmental impacts.

Results show that environmentally friendly practices are economically advantageous as they can reduce production costs through improved efficiency. It is argued that the adoption of IT in the agri-food sector can contribute to tackling some of the most urgent problems revolving around natural resource use in the agricultural sector. In 2013, the project has been expanded to other Countries (e.g. Greece), in collaboration with local partners, such as national research centres and farmers associations. Furthermore, Barilla is developing horizontal agreements with other operators of the Italian agro-food system. These agreements ensure outlets to all crops in rotation, therefore supporting farmers in developing multi-year sustainable crop rotation systems.

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The comparative analysis of social performance of global and local berry supply chains

Mikelis Grivins, Talis Tisenkopfs, Zaklina Stojanovic, Bojan Ristic[1]

***Abstract* – Our goal in this paper is twofold – to comparatively analyse social performance and to highlight the ways in which the social dimension is embedded in overall food chain performance. In this paper we analyse the social performance of global and local food supply chains in two countries: wild blueberry supply chains in Latvia and cultivated raspberry supply chains in Serbia. For in-depth analysis we have chosen two interlinked attributes (lists of categories) – labour relations and power relations.**

***Keywords* – berry supply chains, social performance, labour relations, power relations.**

INTRODUCTION

The growing scientificliterature addressing food system issuesillustrates the diversity of knowledge needed to make a comprehensive assessment of the effects of our daily consumption. Furthermore, contemporary studies reveal the multidimensional character of food – effects of the system that can be felt across many spheres (dimensions), includinghealth, environmental, economic, etc. Finally many of these dimensions are characterised by strong inner discussions and relativity. These aspectswill be most visible if social lens (dimension) is taken to regard the food system.

A critical assessment of social performanceis likely toresult in significant benefits: due to the relativity that permeates inquiry of social aspects the results of such study could shed a light on the ways how to overcome the plurality of other food chaindimensions. Our goal in this paper is to analyse the performance of the social dimension and to identify/ analyse the nature of links to other food chain dimensions.

For this study we raise two research questions: (1) what is the social performance of local and global supply chains; and (2) how the social dimension is connected to other performance dimensions? To answer these questions we analyse the social performance of local and global berry supply chains in Latvia and Serbia.A supply chain in this case is ananalytical generalization that allows distinguishingspecific actor arrangements ensuring product flow from itsinput materials to the consumer. We have selected two attributes – labour relations and power relations to assess the social dimension.

The data used for the analysis has been gathered for the purposes of EU 7th Framework Programme GLAMUR ("Global and Local food chain Assessment: a MUltidemensional performance-based approach") project (CT FP7-KBBE-2012-6- 311778).

COMPARISON OF BERRIES IN LATVIA AND SERBIA

In the paper we analyse wild blueberry supply chains in Latvia and cultivated raspberry supply chains in Serbia. Analysis conducted by Kirwan et al. (2014) suggests that both Latvia and Serbia represent states oriented towards socio-economic and structural development. In these states "*national socio-economic development is a dominant frame that situates how global and local food chain performance is communicated and judged*" (2014, 3).This means that in both statesthe national food systems are more adjusted to assist global supply chains.

In Latvia we analyse wild blueberry supply chains. Wild forest product picking has strong historical and cultural roots that have been the basis of the emerging of a sophisticated blueberry industry in the last decades. Wild blueberry asa highly valuable product offers rural communities possibility to gain extra income. This in the time of fewopportunities has allowed the blueberry sector to grow. However, it is still a comparatively small and new sector. Because of this the state has been only loosely involved in regulating the sector.

Raspberry chains in Serbia contribute a significant share to the total of exported agricultural products.The entrance price in global raspberry supply chains is high and thus the chains consist of large enterprises able to operate with high quantities. Meanwhile, smaller farmers have been penetrating local markets and strengthening the local supply chains. Unlike the blueberry sector in Latvia, the raspberry sector in Serbia is well regulated. Despite this some actors representing local food chains manage to benefit from lack of controlling structures.

THE SOCIAL DIMENSION

Social dimension is one of the operational fields that can be used to interpret food systems (among otherdimensions economic, ethical, environment, etc. could be mentioned).For researchers it has not been an easy task to define the boundaries of social impact assessment: to define the social, researchers usually rely onsuch concepts as values, norms, beliefs and perception (Vanclay 2002; Macombe et al. 2013). However, this approach contributes to difficulties in selecting proper methodological assessment tools. We interpret the social dimension as interactions between social actors. This interpretation reveals the breadthof the problem spectrumthat the dimension covers.It also points out that most of the social issues will hold strong links to other dimensions of performance (for example, employment practices can be interpreted as a social question, as well asan economic, ethical and even health question). Vanclay describes this idea by stating that "*social change has a way of creating other changes*" (2002, 185).

For this study we have chosen two attributes (sets of categories to assess the particular aspects of the social dimension) for in-depth analysis – labour

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relations and power relations. From analytical perspective, the two attributes represent different levels of abstraction, i.e., labour relations could be perceived as a part of larger attribute – power relations.Impacts of social relations are multi-layered (Vanclay 2002). The selection of attributes of different scalesallows: to ascertain each attribute's performance separately; to observe how performance is conditioned by attributes' relations; to grasp the multi-layer nature of the social dimension.

METHODOLOGY

In this paper we analyse the social performance of global and local berry supply chain arrangements in Latvia and Serbia. We have chosen to compare the performance of five cases: global and local raspberry chains in Serbia and global, intermediary and local wild blueberry chains in Latvia. For in-depth analysis we have chosen two interlinked domains of interactions between the food chain actors – labour relations and power relations.

For the analysis we use empirical data gathered during the GLAMUR project.Both in Latvia and in Serbia several methods have been used to collect the data needed to measure the selected performance indicators: semi-structured interviews, analysis of secondary data, document analysis and media analysis. The variety of data gave us an opportunity to approach the studied issues from several perspectives.

RESULTS AND CONCLUSIONS

There are some overall conclusions that grant better understanding of the way in which these attributes function and interlink. First, attributes hold strong connections to other dimensions – the connections help in explaining the performance of other dimensions. Second, similar contextual aspects might cause different outcomes in global and local food chains. Third, some of the contextual factors (such as governance) serve better to explainthe analysedattributes.

Labour relations –the origins of the product and the state involvementin the chain are key elements that allow explaining labour practices – i.e., in Serbia almost all of involved actors are officially employed, while in Latvia only a handful of actors work in the sector officially. Official employment is a more sustainable way of organizing labour relations. Yet, we also have observed some unexpected consequences of employment practices. For example, raspberry pickers are better protected and in many cases have clearer (yet limited) possibilities for future.Pickers from Latvia do not have any official protection. Yet they have more possibilities to improvise and use the sector as a source of side income. In some cases it even seems thatthis greynessincreases the power of the involved actors – pickers can easily switch actors they collaborate with, can choose how they will be involved in the sector and this gives actors a possibility to benefit from flexible reinterpretation of their roles.

Power relationsis a much more complicated attribute to consider because it includes several layers of power. For example, in both states we observed that supply chains on their own are in subordinated relations – in both states global chains were perceived as a more desirable form of actions. Even when the power attached from the outside has been removed, these chains generated more power on their own. Global chains in general hold more power over the market.

In both cases global chains hold much more pronounced vertical power relations. These chains are also more relianton regulation from the outside. Inthe case of local chains – differences between various level actors remain strong. It seems, that the power accumulation correlates with the entrance price an actor has to pay (both literally and metaphorically) to secure their position. Thus, in the case of wild blueberries the power relations are less pronounced as in the case of raspberries. Furthermore,because of public access to wild blueberrieslocal communities in blueberry chains have more power.

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WG2 - Short food supply chains (regional products; farmers' markets; collective farmers' marketing initiatives; alternative food networks; CSA)

"Our workshop will bring a particular focus on the Community Supported Agriculture (CSA) model and its relations to the other alternative food systems. Even if further research needs to be done to characterize the different CSA movements with more precision, there is a shared feeling among the various geographical branches to belong to the same larger, worldwide movement. The workshop is designed to explore the actors' efforts to consolidate the CSAs as a social movement through field practices (Participatory Guarantee Systems), institutions (charter writing processes, national and regional networks), informal adult education (European CSA Training Program, local educational activities in various countries) or through meetings.

One issue is the multiple meanings CSA have can haven in a single country. For example, in the Hungarian CSA movement alone, with only 10 projects running in 2013, there is a distinction between "share ml" and "box scheme model"(1). Additionally, there are regional specificities: in the new EU member states it is a challenge to manage trust between consumers and producers who have prejudice about the community-based operations due to the enforced co-operatives of the socialist era. In Korea, and more widely in the Asian context, the 'box scheme model' is blossoming while the 'share model' is less successful. Let's explore the creativity and the diversity of the movement.
The second axis should be an investigation on the attempts to set boundaries that clearly separates CSA from a purely "business driven model". A common rule that is emerging from the existing Charters (France and the UK) is that CSA requires a strong commitment, since it relies heavily on the voluntary work of consumers and involvement in a solidarity-based not-for-profit rather then market-oriented interest. The case of the very detailed regulation passed in 2014 in the State of California, backed by local CSA farmers and a CSA network called "the community Alliance for Family Farmers, is very interesting (2). It shows that there is an strong feeling about the need to act in order to protect against "non farm-based aggregated box schemes" from calling themselves CSA. The ongoing debate on a very successful Internet platform-based box scheme in France, and the tensions with the CSA movement, are another sign of the same phenomenon.

In these non-CSA businesses, flexibility is presented as an asset, and compared with the rigidity of the traditional CSA model. Based on concrete local food movements' experiences studies in Asia, the Americas and Europe, we will try to answer the following questions.

- *How can the current proliferation of CSA-like initiatives feed the whole movement (and not just the most flexible models), and be promoted in a way that acknowledges the complementarity of the various alternative food systems?*
- *How can we accommodate social, ecological, and economic vitality in the local food movement?*
- *Do we want a local food 'movement' or local food 'systems'?*

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2) California State Assembly, "Article 6: Community supported agriculture", Assembly Bill no. 224, Chapter 404, paragraph 47060, 28 September 2013.

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Short supply chain and shared value models in agriculture

C. Nazzaro, G. Marotta, M. Nerino[1]

***Abstract* - In this paper the short supply chain is analyzed as a responsible and competitive strategy for multifunctional and multivalue farms, preferred channel of approach of the citizen-consumer to the farm and territory, able to create value and contribute to the improvement of farm and territory reputation. The aim of this work is to analyse the value created and shared through strategies of short supply chain, empirically verifying its consistency and impact on both producer and consumer-citizen.**

Keywords - short food supply chain, multifunctionality, social responsibility, value creation.

INTRODUCTION

The postmodern citizen-consumer appreciates lifestyles marked by healthiness, environmental sustainability, and purchase of products with a greater attention to the ethical dimension (Gatenby, 1996; Moon, 2005). In fact, the responsible citizen-consumer shows new purchasing behaviours, in which the ethical and social components of products or services become determinants, and refers more and more to the following variables: production techniques, product origin, positive externalities deriving from the production, social aspects and inclusion (Marotta, Nazzaro, 2012). These aspects are promoted by the new model of multifunctional and multi-value farm through the valorisation of the short food supply chain (Marotta, Nazzaro, 2011; Marotta et al., 2013).

In the new models of value creation, the short food supply chain, as ethical dimension, becomes a competitive tool for multifunctional and diversified farms, a response to the asymmetric contractual power that affects the food supply. On the one hand, it allows the farm to regain added value (premium price), on the other hand, it leads the consumer to save on the purchase of healthy products linked to the territory of origin (minums price). Therefore, both entrepreneurs and citizens-consumers share the value created through a strategy of short food supply chain, since the direct relationship between farmers and consumers generates a "welfare effect" linked to the fruition of localized positive externalities (public goods created by the farm: landscape, environment, biodiversity, farm atmosphere, traditions, etc.), which makes the citizen-consumer willing to recognize a premium price (*willingness to pay*) to the set of products and services offered by the farm and the territory, compared to competing products distributed through traditional channels. This leads, by means of the premium price, to the creation of a market for the public goods produced by the farm, and through the minus price, to the valorisation of the public goods created by the citizens-consumers with their responsible and virtuous behaviours.

The short food supply chain generates, in this way, different *value chains* and performs a function of social responsibility, not only for the producer and the citizen-consumer but also for the entire local context, sharing the value created.

This study analyses the short food supply chain as a competitive strategy for an agricultural, multifunctional and multi-value farm, since it makes the citizen-consumer closer to the farm and the territory, creating welfare and shared value and increasing the farm and territory reputation.

The research focuses on the variables that influence the creation and sharing of value in the short food supply chain, with the aim to evaluate the impact of this strategy on the farm competitive repositioning.

METHODOLOGY

This study aims to investigate how a short food supply chain could affect the citizen-consumer's willingness to pay for the farms' products and to create shared value in multifunctional agriculture. To this end, a questionnaire was administered to a sample of 100 multifunctional wine farms, operating in the Sannio area, which have adopted a strategy of short food supply chain, in order to evaluate, through a descriptive analysis, the influence of some social and economic variables on the premium and minus prices (shared value). These indeed represent the advantages gained and shared by the entrepreneur and the citizen-consumer respectively, by means of a short food supply chain.

The premium price is measured by the difference between the price of the bottle of wine sold directly from the farm and the price of the same bottle at the wholesaler. The minus price is measured by the difference between the price of the bottle of wine sold directly from the farm and the price at the retailer.

The social and economic variables considered in the model are grouped into four areas of interest: Human Capital, Farms Internal Resources, Farm's Public Goods and Social Responsibility. Anyway, the results will focus on the variables that are more likely to affect premium and minus prices:

1. Age and educational level of the entrepreneur;
2. Adhesion to networks;
3. Farm's public goods and orientation to social responsibility.

As regards the first variable, the study has considered the following groups:

1.1 Age (<40; 40-50; 51-60; >60);
1.2 Education (Elementary School; Middle School; High School Diploma; Bachelor Degree; Master Degree).

The second variable is a dummy variable with only two possible outcomes:

2.1 Yes, whether the farm belongs to a network;
2.2 No, if otherwise.

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The third variable is an evaluation of the quality level of localized public goods (landscape, biodiversity, farm atmosphere, traditions) and orientation to social responsibility (in particular through activities of social inclusion) of the farm, made by an expert during the interview. The quality level, which may have a maximum score of 60 based on the questionnaire, is divided into three main classes:

3.1 Low (a score below 20);
3.2 Medium (a score between 20 and 40);
3.3 High (a score higher than 40).

RESULTS

The main results of the analysis have highlighted a strategic role, relating to the shared value created through a strategy of short food supply chain, of the human capital. In fact, as regards the age and educational level of the entrepreneur, the descriptive analysis has provide evidence of its impact on premium and minus price. On the one hand, the analysis has revealed a negative relationship between premium price and age of the entrepreneur. An entrepreneur of less than 40 years old will reach a premium price of 36,3%, while this proportion drastically declines, when considering older owners, arriving at almost 19%. On the other hand, the minus price, which represents the value gained by the citizen-consumer in terms of higher contractual power, results to be grater in the case of older entrepreneurs, starting from a minus price of 63,7% for under 40 entrepreneurs and reaching the 80,8% for the over 60.

The analysis has also shown a similar relationship between premium price and educational level. The premium price ranges between 19,4% and 37,2%, from the lowest class, elementary school, to the highest, master degree. In addition, the minus price has presented a similar pattern to that one previously reported about the age. Therefore, this allows to affirm that younger and educated entrepreneurs lead, at least potentially, to value creation along the short food supply chain. Entrepreneurs and citizens-consumers will share this value in different proportions, which are expressed by the premium and minus prices.

Finally, the adhesion to networks and the quality of the (localized) farm's public goods appear to affect positively the premium price. In particular, the availability of high quality public goods (landscape, biodiversity, traditions) and a farm social responsible behaviour reveal a growth of the premium price from 18,4%, in the case of law quality, to 39,65% for high quality. Thus, it is demonstrated how the relational capital and a multifunctional and socially responsible agriculture positively affect value creation.

CONCLUSIONS

The results of this study allow to identify those strategic variables that have a major impact on shared value creation, within the strategy of short food supply chain and the new models of multifunctional and multi-value farm.The objective is also to provide useful information for policy makers, emphasizing the need for public intervention and reform in the field, aimed, in particular, at encouraging the development of a young and educated human capital, a greater adhesion to networks and the production of localized public goods.

In conclusion, the study has provided evidence that a short food supply chain can leads to value creation, being the short supply chain an strategic factor able to create an enduring competitive advantage for the multifunctional farm: the sharing of such value between farmers and citizens-consumers can be affected by the characteristics of the human capital, the adhesion to networks and the valorisation of the localized public goods produced by the farm.

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Sustainable food systems: Community Supported Agriculture a social-ecological analysis

Elisabeth Steigberger[1]

Abstract **– The paper refers to the debates on sustainability transitions regarding our present food system in general and agriculture in particularl. The concepts of social metabolism and colonization of nature serve as theoretical and analytical framework. The paper is concerned with small-scaled farms, local food systems and Community Supported Agriculture (CSA) within Austria. The paper asks whether and in what way small-scaled Austrian farms that apply the concept of CSA changed their socio-economic and ecological performance. We discuss whether and how these changes allow for a more sustainable way of farming, ecologically, socially and economically. Results show that the farms became more resilient economically and socially while little has changed ecologically. It becomes obvious that CSA allows small-scaled farms to continue or start organic farming in a way that is compatible with the farmers´and consumers´need and expectations, while general market dynamics become less important. These examples discussed might serve as inspiration for innovative ways of small-scaled farming, contributing to sustainability transitions.**

Keywords **- Community Supported Agriculture, small-scale farming, local food systems; niche innovation; sustainability transitions**

INTRODUCTION

The industrialization and intensification of agriculture allowed for higher crop yields, while at the same time causing environmental problems (Rosin et al., 2012; Goodman et al., 1991). Intensive cultivation methods strongly rely on using pesticides and fertilizers, causing, for example, a loss of biodiversity and pollution of waters. Moreover, the agriculture of the global north is eminently dependent on fossil fuels and significantly responsible for humanly induced CO2 emissions (Lutz and Schachinger, 2013). Furthermore, studies show that humanity consumes more bio capacity than available on earth (Haberl, 2008). These developments show that the dominant agro-food system is not ecologicallysustainable (Rosin et al., 2012). Furthermore, regarding socio-economic aspects, food has become a commodity and subject to market dynamics as any other product. Moreover, the origin of food is often difficult to trace and consumers know little about food-production and processing or about logistics, transportation or food-quality (e.g. ingredients, additives) (Koerber and Kretschmer, 2006). Harriet Friedmann points out that the dominant food system is in a state of flux and identifies social movements as central stakeholders in this progress (Friedmann, 2005). Local food systems, questioning the dominant food system, play an important role within these social movements. Their goal is to offer alternatives to the dominant food system.

Local food systems can be seen as niches (Geels, 2005), having the potential to provide solutions for political, economic and ecological crisis (Brunori, 2010) and to initiate systematic transitions.

This paper focuses on a special form of local food systems, namely on the concept of Community Supported Agriculture. The idea of this concept is that farmers and consumers unite, sharing risks related to farming: If there is a poor crop, everyone receives less, not just the farmers (Cone and Mhyre, 2000).

The paper asks about the social, ecological and economic changes farms are facing by becoming a community-supported farm. We ask whether and in what ways those farms (might) move towards sustainability.

METHODS AND DATA

Data were collected by means of literature reviews and qualitative interviews. The interviews were held with the farmers, who adopt the concept of Community Supported Agriculture. Indicators were formulated to measure social, ecological and economic sustainability of the farms.

Social indicators: communication between consumers and farmers; job satisfaction and autonomy of decision; time use.

Ecological indicators: transport; biodiversity; waste. Economic indicators: financial security; income; market pressure.

RESULTS

Social dimension

Results show that adopting the concept of CSA has a significant impact on the social performance of farms. For example, the communication- between farmers and consumers- increased strongly. The concept of CSA allows farmers to have direct contact to the consumers, which facilitates work in several respects.

One farm, for example, resigns an official organic certification, as, consumers trust them. This is to say that consumers know how their food is produced because they are allowed and invited to visit them on the farm. Avoiding official certifications allow farmers to work more self-determined, thus making decisions according to their own needs and wishes. Moreover, CSA allows for knowledge-exchange between consumers and farmers- which Goodman et al. (2012), describe as ”shared knowledge”. Farmers receive more appreciation for their work and products than before, which increases their job satisfaction.

Ecological dimension

The examined farms, except one, already applied organic farming methods. Hence, shift to CSA had no significant impact in terms of ecology. The study,

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however, demonstrates an increase invegetable diversity at most farms as consumers became interested in eating vegetables they did not know before. Furthermore, most farmers could reduce their transport-miles, especially those farms that had a box scheme before.

Economic dimension

The economic situation changed at all farms. They got financial security through shifting top CSA. This is to say that even if there is a poor or a failed crop, farmers can still count on an income. Consumers pay a membership-fee for one year in advance. Thus, the farmers have, unlike before, a regular fixed income.

Consumers and farmers share the risk of farming. Knowing their financial budget in advance, it becomes easier for farmers to calculate and plan production-prcessess. Instead of producing for an anonymous market, farmers produce for the members of the CSA. "*Rather than laboring to meet the demands of the global market they are managing the land for the benefit of the local community"* (Pilley, 2001). With this, farmers are able to produce rather independently from regulations and norms set by, for example, supermarkets.

DISCUSSION

In these cases the adaptation of CSA had positive impactson the farms in terms of sustainability. By means of the formulated indicators we could determine thatthe farms work more resiliently,especially economically and socially. The CSA members have direct contact to the producers and arebetter informed about food-production. The farmers get financial security through CSA and are able to secure their existence.The CSA concept has the potential to give farmers new perspectives to continue their business and allows them to continue organic farming.The results of this investigation show that CSA allows small-scaled farms to exist independently from the general market and work more self-determined, which increases their job satisfaction.This form of local food system can serve as a niche to provide an alternative to the dominant food system. CSA is a way of farming which can move towards sustainability on a social, ecological and economic dimension.

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The mis-interconnection: when peasant farming encounters modernized consumption culture

Congzhi He, Huijiao Xu, Jingzhong Ye[1]

***Abstract* – The 'nested-market' practice which aims to promote the direct connection between rural peasant producers and urban consumers in mainland China, is an alternative approach to respond to the deterioration of the livelihoods of the rural peasants and the food safety problems of the urban consumers. However, various problems and obstacles also emerged at the same time during the direct encounter due to the enormous discontinuities between the two groups of people. According to our study, we argue that the discontinuities at the interface of the connecting process are rooted in the discontinuities of the different modernization courses between rural and urban – the gap is widening and deepening. Therefore, in the contemporary food regime, the relationship between production and consumption reveals a more significant 'dual' structure. We are still facing the inevitable challenge of how to bridge the gap and convert discontinuities into continuities in building an alternative food system, which is a slow process of difficult adjustments and adaptations between producers and consumers.**

***Keywords* – discontinuities, 'nested market', rural-urban relationships.**

RESEARCH BACKGROUND

The food empire has monopolized the food production and consumption, not only seized the agricultural knowledge power (Ruivenkamp, G.T.P., 2003), devalued local food culture, devitalized rural life and destroyed peasants' livelihood, but also shaped consumers' food diet, narrowed the space for healthy food choices and increased the health risks (Quaye Wilhelmina et al., 2010). Thus, what the modern food system represents is not the simple economic relations, but actually coves social, political, cultural, biological and other aspects. In this context, the main focus of alternative food system is not the competition for the cheapest food, but the cooperation for the best food (Quaye Wilhelmina et al., 2010). Among the alternative food system practices, Nested Market is an approach to respond to the deterioration of the livelihoods of the rural peasants and the food safety problems of the urban consumers in China. Different from the vertical control of the food empire, Nested Market challenges the mono-power by establishing new rules, new roles, new power relations and new shared values, enabling the surplus value to be shared by local people without being grabbed by one single center. Therefore, Nested Market creates a limited, bounded, real-name tracked but not anonymous market for consumers to be aware of who are producing what kind of products for whom, which makes the connection behind the consumption visible and important, but not invisible or dispensable (Jan Douwe van der Ploeg et al., 2012).

The project is located in Yanqing County of Beijing Municipality and Yixian County of Hebei Province. Peasants' group and consumers' group are fostered to achieve direct connections, the former of which is self-organized to prepare for the order and deliver the goods to Beijing themselves once a month. As for the consumers, their participation in Nested Market is based on mutual trust, some of whom were introduced and invited by friends and colleagues.This paper attempts to reflect the discontinuities between urban consumers and rural producers at the interface of 'nested-market'; the interactions between consumers and producers, the reactions to problems, the interpretations and narrative about their own actions, as well as the mechanisms of such a mis-interconnection.

RESEARCH METHODS

Researchers take action-oriented approach, and put themselves part of the social settings, planning, intervening, observing and finding questions, reflecting, responding and making adaptations. As for data collection, large amounts of observations and documentations of the interactions between consumers and producers would be precious materials for analysis and further intervention.

RESEARCH RESULTS

During the practice, various problems and obstacles emerged at the same time during the direct encounter due to the enormous discontinuities between the two groups of people. Frequently, there are mis-interconnections, divergences, and even failures of the connection process, and it is usually difficult to build up mutual trust.

Firstly, the discontinuities partly root in the differentiation of quality evaluation standards between rural and urban areas. Secondly, when urban instrumental reason (strangers' society, economic rationality, market logics) encounters rural substantive rationality (acquaintance society, value rational, personal relationship and rural political pressure), discontinuities inevitably exists between rural and urban areas. Thirdly, the uncertainty, seasonality, and small scale of peasant agriculture cannot always meet the unstable and diversified consumption needs. Fourthly, what consumers required tend to be convenience, accuracy, standardization and e-commerce, which is most of the time restricted by the limitation of villagers' organizing and delivering abilities as well as their insufficiency of network skills.

Last but not the least, consumers' preference for good and cheap foods has to compromise with villagers' organization and delivery costs as well as

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producers' desire to improve their livelihoods. The penetration of market logics into the countryside also made it hard to perfectly ensure the quality of all the products.

RESEARCH FINDINGS

The constructed modern consumption: those discontinuities revealed that not only the organizing process of food from farm to table has been reshaped, but also the food diet, consumption habits and preference as well as consumption choices have been reorganized and restricted by the modern food system.

Firstly,the constructed modern consumption has something to do with the modernity features of urban society, such as living conditions and lifestyle.

Secondly, the expansion of capital in the geographical space and living space has made the consumers be stared at and supervised by the invisible forces which control the market, the marketing strategies of which help guide and construct the demands of consumers.

Thirdly, modern consumption experiences brought by supermarket revolution, logistics revolution and information revolution in the last two decades tend to be accurate, convenient, regular, efficient, scientific and rationally organized, creating the illusion of 'consumers supremacy'. What's more, urban consumers', especially the young generations' separation from local agriculture, local food culture, rural society and our nature, lead to their alienation of production and consumption as well as their uncompleted and defective life experiences, which inevitably reverts the consumption ethics and promotes the penetration of market logics and economic rationality into their consumption behaviors.

Local production in change: at the same time, the traditions of the rural areas have also been reorganized and reshaped by the modernity. The villages have been suffering the penetration of market logics, the externalization of agricultural activities, the commercialization of means of production, especially the de-peasantization and de-agrarianization. In other words, the villagers have been experiencing the re-examination and reflection of their identities, cultural values and meanings of living. There are various problems and risks brought by the externalization of agricultural activities, including loss of control of their products, damage of their resource bases, ignorance and blind of agricultural knowledge, deprivation and dependence and etc. Consequently, the local food produced sometimes cannot meet the requirements of pure traditional products from the consumers which also led to the discontinuities in the rural-urban connection process.

CONCLUSIONS AND THE CHALLENGES

Nested Market not only concerns rural livelihood, but also covers the changes in social, natural, political and life relationships behind food production and consumption, such as the establishment of new rurality, the vitality of rural areas and etc. The discontinuities at the interface of the connecting process are rooted in the discontinuities of the different modernization courses between rural and urban – the gap is widening and deepening. Therefore, in the contemporary food regime, the relationship between production and consumption reveals a more significant 'dual' structure. We are still facing the inevitable challenge of how to bridge the gap and convert discontinuities into continuities in building an alternative food system, which is a slow process of difficult adjustments and adaptations between producers and consumers.

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East Asian 'model' of local food?: key features and implications

Chul-Kyoo Kim, Mima Nishiyama, Jong Duk Kim[1]

***Abstract* – In both Korea and Japan, short food supply chains such as farmers' markets, CSAs, and local food shops have been attracting strong public attention in recent years. Health & price concerned consumers and economically difficult farmers consider the short food supply chains as an alternative to the existing food channel dominated by large supermarkets. Yet, East Asian local food experiments seem to lack active initiative and participation by the actors of consumers and farmers. That is, the central government and local governments have been playing an active role in promoting local food while consumers and farmers remain passive and interested in financial gains. For example, there are more than 50 local food shops supported by the government in Korea. In Japan, local governments and semi-statal agricultural coops are arranging local food shops. In both cases, grass root engagement by social actors, i.e., farmers and consumers, is thin. We analyze the key common features of local food systems in Korea and Japan by locating them in the historical context of social and agricultural development in each country. We argue that in order to make a genuine local food system, they need to be embeded in social values such as solidarity, participation, and democracy.**

***Keywords* – local food in Korea, local food in Japan, government role, direct sales shop**

INTRODUCTION

Both Japan and South Korea are well-known for their impressive economic development. What is less-known it their similarity of vulnerable agri-food system in each nation. In a sense, economic growth of two East Asian countries was built upon the sacrifices of farmers and farm sector. In both countries the farmers have been suffering from economic difficulties and rural communities are facing serious social reproduction problem because of excess outmigration to the cities and rapid aging of populatin. In recent years, under the neo-liberal global regime or the Third Food Regime, cheap agricultural products from overseas have been imported in massive quantity, which raise the issues of food sovereignty and food safety. Extremely low food self-sufficiency of both Korea and Japan demonstrates the current vulnerable state of East Asian agri-food systems.

In this situation, local food movement has become quite popular in both Japan and Korea apparently following the trend in the West. In the West, eating local food was regarded as a popular mobilization tool to address problems of the global agri-food system, and local food has become a locus of agri-food politics (Henderson, 2000; Allen et al., 2003; Hinrichs, 2003). Community Supported Agriculture (CSA), farmers markets, food policy councils, community gardens, farm-to-school programs, and school gardens are some examples of the local food movement. Some scholars such as Henderson (2000) argue that ''local food'' could become an important way to promote a ecologically sustainable, socially equitable, and economically viable future for the food system. The local food and the studies about it can be found abundantly in the US, Canada, and Europe. Yet, it seems less is known about similar efforts in other parts of the world.

As Kimura and Nishiyama (2008: 51) puts it, "greater attention needs to be paid to movements varying histories, discourses, and identities." Japanese local food movement, or *chisan-chisho* movement, and Korean local food movement, *Jiyok Mokgori* movement, share the ideas of general local food movement such as respecting local economy, criticizing global food system dominated by corporations, building social ties between producers and consumers, and ecological concerns. Yet, these East Asian forms of local food also have some distinct features. This paper attempts to explore the peculiarities and similarities of Japanese and Korean local food. Then, we will try to draw some sociological and policy implications from the East Asian cases.

METHOD AND DATA

This study use case studies from Korea and Japan to highlight some distinct features of local food 'movement' in East Asia. Hence, case studies are used as a heuristic tool for theorizing historical peculiarities of East Asian local food to compare with Western local food movement. The data for case analysis is collected from existing academic literatures, internet news, related web-pages, and the researchers' knowledge from participant observation.

LOCAL FOOD IN JAPAN AND SOUTH KOREA

In Japan, chisan-chisho movement, local food movement, is characterized by active involvement by the government and quasi-governmental organizations. Majority of chisan-chisho advocates are either government-led or Japanese Agricultural Cooperative (JAC) - based. The government-led chisan-chisho movement operates on various levels, from town, city, prefecture, to the national level. The national government adopted the concept of chisan-chisho in its 2002 Revitalization Plan for Food and Agriculture (Shoku to Noh no Saisei Plan) (Kimura and Nishiyama (2008), which means that the role played by the central government was important in promoting local food programs in Japan.

In Korea, local food movement in the name of *Jiyok Mokgori* has become quite popular. In the launching of local food movement in Korea, the experts seemed to have played an important role. Several Korean sociologists, economists, and anthropologists began to organize seminars and workshops on alternative agri-

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food system in the early 2000. They formed Local Food Research Group (LFRG) in 2005 and conducted research on local food in the US and Japan. LFRG received financial support from National Research Foundation of Korea and they visited Kobe, Japan in 2007 to directly observe chisan-chisho. This experience led to more active involvements by the expert to promote local food in Korea. Since then, various local governments such as Boryeong, Wanju, Seochon, and Yangpyong, got interested in local food and have started diverse local food promotion projects. The local food in Korea took another significant turn in 2013 as the central government led by president Park Geun-Hye regarded it as a new strategy to rationalize agri-food distribution system.

The Ministry of Food & Agriculture, in collaboration with the National Agricultural Cooperative Federation (NACF: NongHyup), has been promoting and supporting local food direct sales shops. Its goal is to open 100 direct sales shops by 2016. Most farmers, who often lack reliable outlet for their products, regard this aggressive drive for local food by the government and semi-government organizations as opportunities to sell their agricultural products regularly.

CONCLUSION

In reflecting upon the local food efforts in Japan and Korea, the followings can be said. First, local foods in both Japan and Korea were initiated and fostered by the government. This reflects the historical context of each nation where the state has been rather strong vis-a-vis civil society. Second, local food was taken as a 'national' agenda in overcoming difficulties faced by the farmers and farm sector. Third, in initial launching of Korean local food, the experts played an important role in promoting local food and giving advice to the related governments or organizations. In addition, Japanese chisan-chisho and Western local food both have influenced the discourse and programs constructed by Korean experts.

While local food has become fairly important project for agri-food sectors in Japan and Korea, there are some problems as well. Most importantly, the grass-roots dynamics and democratic participation by both farmers and consumers are lacking in the East Asian local food. Some critics argue that there has been a political appropriation of local food movement in Korea. In addition, with increasing public awareness of the term 'local food,' some big food franchises began to integrate it in promoting their restaurants without genuinely incorporating the values of local food movement. Commercial appropriation is also taking place. East Asian experiences show that actual local food can be diverse in different historical context. Moreover, we need to ask the fundamental question of what do we really want by local food movement.

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The tendencies on the Brazilian local food movements: an analysis of the Collaborative Purchasing Systems

Potira Viegas Preiss, Flávia Charão Marques[1]

***Abstract* – This article aims to present a characterization of Brazilian scenario of Collaborative Purchasing Systems. It draws data collected on a survey carried on 2014 among different groups, which are complemented with literature review. Presents a basic profile of the groups, functioning dynamics, as well as considerations on the impact that engaging in those initiatives have towards actors social practices. We also introduce a short dialogue among convergences and disparities around the Brazilian case within the European local food movements, contributing to the debate of how these experiences can feed the whole movement.**

***Keywords* - Collaborative Purchasing Systems, Brazil, producers and consumers relations**

COLLABORATIVE PURCHASING SYSTEMS AND BRAZIL

Collaborative Purchasing Systems – CPS, such as networks, groups, collectives, associations that somehow has established direct relations between producers and consumers for marketing food products. We consider those experiences within a counter-movements frame, therefore a cultural response to global forces, in which the notion of globality and modernity as a homogenizing process is challenged to consider how actors create agendas for action. Within this context, producers and consumers no longer have a passive role in absorbing and following the precepts of the hegemonic food system and through their agency, can seek to incorporate practices into their reality that are more consistent with their own rationales and agendas.

The first two initiatives in Brazil date back to 1978, in a context where access to organic food was difficult, leaded by consumer groups engaged in the ecological movement, mobilized against the use of chemical additives and in favour of family farming on a small scale, which corresponds correspond to the same period of emergence of European and Asiatic initiatives, as quoted by Lamine (2005).

There is a scarcity of studies around the Brazilian Collaborative Purchasing Systems - CPS that may help to understand the contributions that these initiatives can generate to social change. Very few studies were developed, even doe there are register of more than 45 initiatives in the country, such as networks, groups, collectives, associations that somehow has established direct relations between producers and consumers for marketing local food products. There is a "Network of Responsible Consumption Groups", a denomination that is more accepted in country and that articulates a wider range of initiatives. The Responsible Consumption approach has its origins on the conception that the environmental problems are assigned to a consumerist lifestyle of society, leading to an idea of a new form of consumption need to be developed where individuals to raise their styles of life simpler, less predatory. However, Portilho (2010) brings insightful alert for conceptual and political danger of this term because, were consumer can be seen as a "singular actor bearer of history," with the mission of being "the actor" responsible for the revolutionary transformation of society, exempting others actors in the political field such as state governments, social movements.

DATA COLLECTION

Data were collected from a systematic search for information on initiatives using search engines and social networks on the Internet, in addition to identifying contacts with groups from research already accessed. The data were complemented by an online survey consisting of 29 questions which had the main objective of outlining a basic profile of the groups and their working dynamics. The form was sent to 34 contacts by email, of which 12 returned answered.

MAIN RESULTS AND DIALOGUE WITH THE LITERATURE

The research indicated a total of 46 initiatives located in 33 Brazilian cities, Fig. 1 shows a graphical representation of this distribution.

Differently from the cases reported in other northern countries where there is a clear identity nationally (US and UK – CSA; France – AMAP; Italy - GAS, Spain – Ecocajas; Ecuador – Canastas; Japan - Teikei), Brazilian initiatives present a variety of denominations (networks, collectives, groups, systems, CSA) and express different values or principles on your behalf such as: solidarity, agro-ecology, ecology, responsible consumption, among others.

Most of the initiatives are informal, with only a few legally registered as some kind of association. There is a wide range of supporting institutions ranging from schools, universities and research institutes, to churches and NGOs. The most common way for ordering is online applications, supplying weekly baskets. There are a variety of over 100 food products offered in most initiatives, which are in most cases environmentally friendly produced (agro-ecological, organic or biodynamic).

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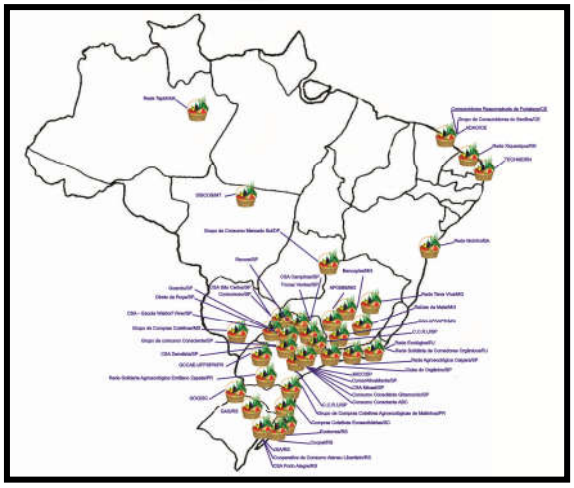

Figure 1. Graphical representation the distribution of the Brazilian Collaborative Purchasing Systems.

There is a high appreciation from consumers to farmers engaged in family farming or who are beneficiaries of agrarian reform programs. Such data converge with initiatives worldwide addressed in the literature, claiming that these experiences have a tend to go beyond the search for organic and healthy products, but are primarily concerned with maintaining or supporting certain forms of production or lifestyle, for examples GAS, CSA and AMAPs.

Although valuing family farming is a common criteria reported in the literature, the issue of participation in land reform programs is a very specific question to the Brazilian context, especially if we consider that in most cases farmers involved with CPS also provide products to federal government programs as the Food Acquisition program - PAA and the National School Feeding Programme - PNAE. Further research needs to be conducted to investigate the significance of these relationships. These characteristics are reaffirmed as important criteria for the motivation of creating the CPS, adding issues such as desire for greater proximity between consumers and producers, concern about health and nutrition, closer ties between country and city and longing for a different food system. In a way, we can understand that marketing, although central, it is not the only activity carry out, being common to conducting educational, cultural and socialization events as well.

In this sense, the data connect those presented by Kneafsey et al. (2008) on relations between producers and consumers in similar initiatives in England and Italy, in which the author suggests the existence of an "ethics of care", so that the process of re-connection between actors occurs in a constructive way, involving feelings of responsibility and empathy, mobilized by the desire to know each other, know the origin/destination of the food, the way they are produced/consumed and is therefore a process that emerges "in relation to" rather a "opposed to" certain discourses and practices, therefore has no directionality in confronting the conventional food system. Also the strong connection between CPS an agroecology and solidarity economy movements, can be related to the political potential of the CPS already addresses by Portilho (2010) and Sherwood et al., (2013), giving a more active role for consumers that can be seeing as a way of "consumer–citizen'.

The investigation also sought to identify possible changes in practices or habits of people due to engagement with these initiatives. The data report that among the most common changes for farmers involve the production of new products, need to change procedures for the cultivation or harvesting, in addition to ways to accomplish the logistics or distribution of products. Learn how to use software and develop new consumption habits are also mentioned. These results corroborate those reported by Lamine (2008) and Brunori (2010) that address the difficulties farmers face to become suppliers in CPS, as this involves a major overhaul of tangible and intangible components of property management and marketing procedures, so that in addition to engaging in innovative processes for production, they need to develop communication and administration skills, such as dealing with various customers and create other logistical ways. As for consumers, are cited new eating habits and there needs to adapt their personal and family logistics to attend the CPS. Also there is an increase in the number of home meals, developing cooking skills and greater knowledge about food production processes.

CONCLUSIONS

In this paper we presented a characterization of Brazilian scenario of Collaborative Purchasing Systems. The profile of the groups finds many convergences with initiatives worldwide; reaffirming that CPS can be considered an food movements with global reach, which varies according to the political and socio-economic contexts in which the dominant food system presents at each location. The relations between the actors have more complex dynamics than those characteristics of the dominant food system, keeping therefore a potential for knowledge construction processes, care and political actions.

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Solidarity Purchase Groups, the aggregation model for local food distribution. First results of a direct study in Marche

Antonella Bodini[1]

***Abstract* – In recent years food networks have evolved towards a more participated model of food provisioning and distribution in urban areas of Italy. Consumers have organized themselves in solidarity purchases groups (GAS) to support as much as possible local producers and enhance local economy.This study presents the results of consumers choices, motivations and commitment of membersofa GAS settled in a city of the central region of Marche. The paper shows that food quality and direct relationship with producers, as well as solidarity approach to consumption, are core factors for new sustainable economic paradigms.**

***Keywords* – alternative food provisioning, solidarity purchase, territoriality, reciprocity economic relation.**

INTRODUCTION

In the last decades food networks have evolved towards a more participated model of food provisioning and distribution in small and medium sized cities. Farmers sell in local markets their products (farmer's markets), while consumers have organized themselves in solidarity purchases groups (Gruppi di AcquistoSolidale - GAS) to support as much as possible local producers.The latter phenomenon stems from consumers critical approach to globalized markets and profit-oriented interests that lead to unfair distributions of wealth (especially in thirds countries) and to low remuneration of agricultural producers. Furthermore consumers look for high quality products (either organic or typical, regional) and decide to cooperate with other peer to buy food.GAS represent an attempt to contrast capitalistic economy through social participation in decisions (selection of suppliers according to shared criteria).

A GAS is made of people who, based on solidarity and voluntary participation, identify producers, buy products and distribute them among members. For every producer there is a voluntary 'referent' with a liaison task. In fact beside negotiating price, arranging the delivery schedule and the payment, he reports difficulties from the producers or special requests from the consumers, as well as organize farm visits or products tasting.

In Italy since mid-90's the so-called GAS have spread all over the country, taking on not only the aggregation model, but also the solidarity meaning of promoting local - thus enhancing local economy-and environmentally friendly food products - thus preserving the territory.

Some Italian researchers studying the phenomenon in Sicily (Schifani and Migliore, 2011)provided evidence of the motivations behind the GAS members such as concern for ethical and environmental issues. Grasseni(2014) prompted the idea that GAS is not only about ethical purchase, but it incorporates quasi by definition social, economic and ecological aspects of food provisioning. Rossi and Brunori (2011) have analyzed how consumption and purchases through GAS can be lead to social changes and innovation at local level. In fact in their work they demonstrate how building a socio-technical system such the GAS calls for new production-consumption models.

In this study the phenomenon was analyzed with a direct survey on members of a GAS to better understand motivations and lifestyle changes related to critical consumption and alternative food networks.

THE SURVEYED FRAMEWORK

In 2014 there were roughly 1.000 GAS in Italy, 50% of them in the northwest of the country and one fourth in the Marche region, where the survey was conducted in summer 2014.

The survey was run on Fano Fortuna GAS settled in the municipality of Fano in the Marche region. The city accounts for about 66.000 inhabitants (medium size for the region), the GASis made of about 200 so-called to *gasistas* (purchasers of GASresponsible for family food provisioning)and it is the second largest GAS in the Region. The GAS suppliers are about 40, mostly certified organic and/or local. In 2014 the total value of products distributed were about 155.000 euros. Food products, accounting for 93% of the total value, are delivered overall by 32 suppliers. Half of them supply fruits and vegetables, 3 dairy products, 7 meat, eggs, fish and 5 are bread and pasta producers. The value of distribution is made by 38% from fresh and processed fruits and vegetables and by 44% of animal food products.The remaining 7% of the distribution is represented by non-food products (cleaning materials, cosmetics).

Similarly to other Italian GAS (Grasseni, 2014) the surveyed one has founded an association with an executive board and its assembly, it holds meetings with members on a regular basis and keeps records of product distribution and expenses of the association and membership fees.

Fano Fortuna GAS distributes products according to the products availability, thus seasonality in theEnvironmental Education Center of the city.The assembly selects suppliers according to proximity and farm visits. Many initiatives are organized along the year, such as courses on home-made breadand noodles, sewing and other cultural initiatives.

The survey aimed at identifying *gasistas'*choices, motivations and commitment to collective and solidal purchases. The questionaire is structured into closed questions where respondents could replyon a Likert-scale and few open questions for overall comments. The questionnaire was submitted to all members both per email and on paper.

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RESULTS

The members of the surveyed GAS are on average aged between 35 and 55, with a household of 3 to 4 components with children of 12 on average, and medium-high level of monthly income. Two thirds are employed or retired, the rest is made of housewives and unemployed.

The questionnaire was duly filled in by 65 consumers who stated that they buyregularly through the GASfruits, vegetables, pasta and cheese, followed by flour and legumes. Some do not buy bread or marmalade because of self-production. Pasta and meat are not frequently bought because of difficulties in storing big quantities.

The main motivations to subscribe to the GAS are quality of products, direct relation to the producer, economic support to small farmers, attention to the environment and proximity to the farmers (short supply chain). Despite good level of product price,economic convenience was not selected as purchase motivation. Farmers proximity is a strong motivation especially for young family with children. In fact families often organize visits to farms offering didactic activities for children. Food quality is more important to family with children, especially when under 12-year old ones, whereas households without children are more motivated by the possibility to support economic viability of small farmers.

As on *gasistas* commitment the main issues arisen are: social and environmental responsibility, support and relation to small farmers, consumption awareness, enhance mutualistic economic relations and purchase alternative products. Aged *gasistas* are more motivated by the support they can offer to farmers by purchasing directly from them, whereas younger ones purchase through GAS because of a sense of responsibility and environmental awareness stemming from knowledge of local productions.

Ever since they are members of the GAS, the surveyed *gasistas* have somehow changed their purchase choices and lifestyle. They stated they look for organic products also in other point of sales, buymore seasonal and local food, they pay more attention to personal wellbeing and alimentation, as well as reduce their household overall consumption. Irrespective to age or gender, seasonality and proximity to production place have been the main issue influencing their lifestyle and purchase choices. Certified organic production is especially important to young g*asistas*, however thanks to trust in farmersorganic production method is considered more important than certification itself.

The main drawback of the GAS lays on the periodicity of distribution which can be an obstacle to household organization of purchases. For fish and meat*gasistas* rely not so much on GAS distribution, but they keep purchasing from their salesman of trust. The large size of the GAS may be also a burden to delivery organization and to select farmers in an harmonized manner.

CONCLUSIONS

The survey have confirmed that the main motivationto participate to alternative food networks is direct relationship to producers, which has twofold meaning. On one hand it represents a crucial issue to trust in production itself, that overtakes the official certification of agricultural production. Moreover it is not just a matter of goods exchange at fairer price, but it disseminates criticism and awareness amongst local communities.

GAS is indeed not only a market, but an exchange of relations between consumers and producers. The former can take advantage from high quality food provisioning, the latter take advantage of planned distribution to place products and gain trust.

Furthermore consumers believe their commitment to purchases of local and seasonal food products boosts environmental viability of consumption, as well as improves economic viability of local farmers. Thus aggregated purchases achieve mutualistic purposes.

To sum up, ethical consumerism behind GAS and its initiatives (self-production, initiatives on sustainability, time bank) promote cultural changes and exchanges in the urbanizing society. Shared and solidalfood networks based on human and sustainable business relations is strongly linked to the territory and its productions.

In modern times where social relations and knowledge are much influenced by technology and speed, it seems that values of solidarity, aggregation, trust and sharing can still play an outstanding role in the local economy and to build globally the so-called human economy.

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An urban CSA in Ireland: model description, relationship with the agri-food industry and introductory exploration of its impact on the community

Daniele Ponzo[1]

***Abstract* – Short food supply chains and "grow-it-yourself" initiatives are constantly growing in Ireland in a context of a factory-oriented agri-food industry. Alarming food scares have brought insecurity to the current food system. This paper will describe the first urban CSA group in Ireland and explore its relationship with other alternative initiatives, like rural CSA's and urban community gardens. This CSA initiative is described from the community building aspect, the group strengthening techniques and the application of the "consensus method" which contribute to making this a viable model. The effectiveness of a urban CSA comes from its focus on reducing food miles and its ability to attract the right target of people who seek an alternative to an "industry-minded" food production.**
***Keywords* – Urban CSA; community-building; re-generative food systems; viable group model.**

THE AGRI-FOOD INDUSTRY IN IRELAND

Alternative agri-food networks are constantly growing in Ireland, we have seen a development in farmers' markets, community gardens and generic GYO (Grow Your Own) initiatives (Ireland has the 5th most innovative agri-food sector in the European Union[2]). However, the Irish agri-food sector is dominated byagribusiness corporations andis functionally specialized in the raising of animals for food production (91% of the land is devoted to pasture[3]), mainly for export. The Irish Farmers' Association have described the imbalance of power in the food chain between retailers and primary producers (Irish Farmers' Association, 2010).

The current situation is no longer sustainable (greenhouse gases from cattle, longer supply chain to import food to Ireland) and we are witnessing a move from an industrialized system to one where people are at the centre of food and agriculture policies (Custot and Gianfelici, 2010).The latest food scares have stressed the need for alternative food supply chain which can offer cheaper food, improved nutrition and the potential to mitigate climate change[4]. New holistic and multi-sectorial approaches are required to promote healthy and sustainable diets (Shetty andSchmidhuber, 2011).

COMBINING RURAL SHORT FOOD SUPPLY CHAINS AND URBAN COMMUNITY GARDEN EXPERIENCES: DUBLIN CSA

The most active promoter of community food systems in Ireland is the Feasta association. It has the longest established CSA project in Ireland (since 2008) in the Cloughjordan Ecovillage and has been promoting various initiatives to raise awareness around short food supply chain andcommunity resilience by involving international organizations (URGENCI, UK Soil association, etc.).The aim of Dublin CSA has been to replicate their experience in the main urban environment in Ireland. This initiative started from a Dublin inner city Community Garden in 2012. Community Gardens are very active in Ireland,they are hubs for discussing food security, community engagement (Nettle, 2014) andare strong examples of participatory economics. The "Dublin Community Grower" network lists more than 30 Community Gardens in the wider Dublin area[5].

We have imported these "Community Garden" values within a CSA model as a partnership between local farmers and consumers (Henderson and Van En, 2007). Also, CSA and GYO activities have been shown to improve mental health and social inclusion (Galli andBrunori, 2013). Research hasshown the positive effect of the CSA experience on people's wellbeing and health (European Commission, 2013) and on the perceived benefits on food security and eco-efficiency of use of resources (Pintar et Al., 2015).We have observed that Dublin CSA group share a common set of values around local and good food (Sage, 2003) and participate in the sense of proximity and community described by Dhalberg as "regenerative food system concept" (Dahlberg, 2003). This contrasts with the "eat local" campaigns of big supermarket chains, who dictate corporative standards to local growers (DeLind, 2010) and promote an anonymous and depersonalised experience (Wegerif, 2012).

Our main grower is based in Celbridge, about 20 km away from Dublin, easily reachable by motorway and bicycle. He is a community garden member and this is his first experience in growing for a community, so this is a learning opportunity for all of us. He has grown 38 different varieties of vegetables in his quarter of an acre farm and has been able to provide almost 1,000 kg of vegetables, which have fed the 25 members of our CSA group for the entire season (from May till October).

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DUBLIN CSA: A STRONG GROUP WITHIN A COMMUNITY

Dublin CSA has proven successful in bonding with an existing community, basing its activities in a recently established social business,"ThirdSpace Café". This is a space for creative, cultural and community activities and the owner has become an active member of our CSA. We have organized public events centred around food politics, with talks and presentations on food sovereignty, agricultural sustainability, short food supply chain, nutrition and community involvement. Our group is now framed as a "local food movement". Our events have attracted community members, seed saving associations, farmers and students and we have also learned to actively market ourselves (flyers, posters, social media). After a clear and transparent interview process we have also been able to involve more small-scale growers in our CSA. We now also enlist a graduated horticulturalist as a grower.

Dublin CSA code of conduct and constitution is based on a communal decision-making processand consensus method. The group works on the principles of a viable system model scheme (Kaner, 2014) to ensure participatory decision-making and integration of divergent points of view. We had to incorporate some techniques of conflict management, to make sure a viable and open exchange was always in place within our group. We try to adopt a collaborating approach and, if not possible, a compromising one[6].

The group is very diverse in terms of nationality, occupation and age profile andis bonding different generations, in line with an anti-consumeristic approach, environmental concernandan interest in consuming differently.The CSA has created a point of encounter for the 'disillusioned seduced', a class who has the resources to pursue consumerist pleasures, but has found the process of seeking fulfilment through consumption largely unsatisfying (Soper, 2011). Our members (especially the younger ones) are looking for a sustainable diet and a strong community focus. Dublin CSA has contributed to expand this idea to other aspects of the members' consumption and lifestyle.

Entering our third season, we have about 30 active members and we are now exploring the group resilience in an ever changing environment. We have combined the classic CSA farm visit with skill share (for example sowing), yoga classes and bicycle trips, to create attractive social gatherings.Dublin urban CSA is constantly working to showcase its example,to attract potential new members[7]. We have involved local companiesto set up box-schemes without the CSA community and solidarity involvement.

We have observed that the way to a successful CSA model in an urban environment will need to equally balance the focus on food sovereignty, community building and education initiatives, all using a viable system model approach, to make sure each member will participate actively in the group's life. To use Inglehart's famous dichotomy, it will need to make its message attractive not only to people orientated to self-actualization, but also to the ones struggling with perceived insecurity (Inglehart, 1990).

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How to find producers and consumers interested in Community Supported Agriculture in Sweden

Jenny Sjöblom[1]

***Abstract* – The unconventional model of agriculture Community Supported Agriculture (CSA) is expected to contribute to a more sustainable food supply and a sustainable landscape; the development of rural areas; a stronger relationship between producer and consumer, and a healthier diet. However, several studies have shown that the concept requires a certain amount of commitment to the philosophical ideas of the concept and several CSA in Sweden find it difficult to find customers in their local community. In this paper the motives behind producers and consumers attending Farmers' Markets in Sweden has been compared with the motives behind CSA-producers and Swedish consumers. Conclusion can be drawn that the producers selling at Farmers' Markets as well as consumer attending these markets could be a potential target group for CSAs in Sweden.**

***Keywords* – Community Supported Agriculture, CSA, Farmers' Market, sustainable agriculture**

INTRODUCTION

Local food production operated by small-scale farmers is raised as an alternative to the current model of global food chains (Nilsson and Mont, 2010; Winne, 2010). Part of this alternative food movement is the model Community Supported Agriculture (CSA). CSA is based on a short value chain system (Flora and Bregendahl, 2012) and the only model of farming in which customers consciously agree to share the risks and benefits with the farmer (Henderson, Gussow and Van En, 2007). The model is based on seasonal shares; meaning that the members commit to the whole season and normally receives a weekly produce during the growing season (Forbes and Harmon, 2008; Cohen et al., 2012). Even though the model is believed to hold a number of advantages (ibid.) the challenge seem to be to make the concept more available to the wider public and to find customers nearby. Studies (Forbes and Harmon, 2008; Sjöblom, 2015) have shown that the concept require a certain amount of commitment to the philosophical ideas of the concept. In this study the motives behind producers and consumers attending Farmers' Markets in Sweden (Nilsson, 2009; Nilsson and Mont, 2010) has been compared with the motives behind CSA-producers and Swedish consumers (Sjöblom, 2015).

RESULTS

The producers at Farmers' Market

There are several aspects that indicate that the producers attending Farmers' Market could be a potential target group for CSA.

1. Willingness to try new things. According to Sjöblom's study (2015) the producer must adopt a new mindset in order to be able to apply the CSA model. It is generally believed that willingness to try new things is influenced by the producer's age and as the producer gets older, the tendency to take risks decrease (Nilsson, 2009b). However, several of the producers participating in Farmers' Markets or changed to organic certified agriculture have been shown to be in the higher age group (Nilsson, 2009b), indicating that the tendency to take risks does not necessarily decrease along with aging. One could therefore assume that some of these producers could be interested in trying a new model, such as CSA. An assumption that is supported by the Federation of Swedish Farmers' historical study about Swedish agriculture which illustrated that most organizations within the Swedish agriculture "has had a surprisingly good ability to change business direction when society changed" (LRF, p. 14).

2. Value the social contact. Producers at Farmers' Markets in Sweden highly value the social contact with consumers and have a strong incentive to increase the connection to their local community (Nilsson, 2009b). The main reason why the producers attend the markets, despite them being very time consuming, is to meet the consumers (Nilsson and Mont, 2010). This shows a strong willingness to prioritize time with consumers, an important part of CSA. For producers who want to improve the connection with their local community CSA could possibly be a better tool than Farmers' Market. Firstly because the markets are very time consuming (Nilsson and Mont, 2010) and lack of time seems to be an issue for the producers; for some producers this has been the reason why they left Farmer's Market (Nilsson, 2009a). Secondly because the Swedish consumer according to the producers generally look upon market visit as an excursion and not as a way to make their weekly food purchases (Nilsson and Mont, 2010). Issues that could be solved through the CSA model.

3. Value traditional food production methods. The use of traditional production methods and recipes is an important aspect of CSA (Sjöblom, 2015) and something which is also valued by the Farmer's Market producers (Nilsson and Mont, 2010).

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4. More sustainable agricultural practices. Based on Nilsson's studies (2009b) there seem to exist a willingness among the Farmers' Market producers to apply more sustainable agricultural practices.

The consumers at Farmers' Market

Studies indicate that consumers attending Farmers' Market could be a potential target group for CSA. Firstly, a CSA has the ability to meet the needs (highlighted by Nilsson 2009a) of the consumers at the Farmers' Market; locally produced organic, fresh vegetables of good quality and the opportunity to meet the producer and support small-scale agriculture. Secondly, price does not seem to be an issue for Farmers' Market consumers. According to Nilsson and Mont (2010) Farmers' Markets seem to attract people who value locally produced and quality products and who are more susceptible to pay a higher price for these products due to quality and freshness. However, CSA could possibly attract other consumers besides those attending Farmers' Markets. According to Nilsson (2009a) quality, way of production and emphasizing the link with the local community and the environment is a niche that adds value to the product.

Several Swedish studies have also shown that quality is becoming more and more important when it comes to food (SOU, 2015; Anselmsson et al., 2014; Nilsson and Mont, 2010), consumer demand and willingness to pay in terms of Swedish fresh produce is relatively good (SOU, 2015) and the sales of organic fruit and vegetables have gone up (SCB, 2013).

DISCUSSION

Comparing the studies about Farmers' Markets in Sweden (Nilsson, 2009a; Nilsson, 2009b; Nilsson and Mont, 2010) with a study about CSAs in Sweden (Sjöblom, 2015) conclusions can be drawn that the producers as well as the consumers who participate in the Farmers' Market could be a potential target group for CSA in Sweden. As for the producers attending the Farmers' Market, there are several aspects that indicate that they could be a potential target group for CSA. Through applying the CSA model the producers at Farmers' Market could be able to focus entirely on one target group, avoid time consuming markets but still have the desired close relationship with their consumers. Through a CSA the producer has a suitable product to sell while at the same time they need to spend less time on different distribution channels, a perceived problem among the producers in Nilsson's study (2009b). Some Farmers' Market producers operate their production as a part-time job and do it alongside other income generating activities (Nilsson and Mont, 2010). CSA could provide an opportunity for the producer to be able to practice farming full time.

In Nilsson's study (2009b) it was also detected that the producers are only able to continue with organic production to a certain limit; there is a pain threshold when they no longer have the opportunity to continue if the subsidies are reduced or the production costs increase. CSA could be a solution to this since they are not as vulnerable to external factors.

Finally, more studies need to be conducted to see whether the producers and consumers at Farmers' Markets could actually be a potential target group for CSAs in Sweden.

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WG3 - Economic impact at the farm level

Multifunctional agriculture is seen today as a new model of farming and of agricultural business, able to capture the changes in contemporary society and meet the needs and the demand of consumers, citizens and taxpayers. Farmers search for new sources of income, in order to diversify their production and lower the risk factors, often shifting their inputs towards non-agricultural goods and services. At the same time, they may adopt strategies to remunerate non-productive functions, also through access to public policies that are more and more oriented to support social and environmental functions.
The aim of this working group is to investigate the ways farms adapt to changes in the direction of multifunctionality, diversifying their activities and income sources towards the production of new goods and services and also of public goods.
Multifunctional agriculture has been traditionally associated to the characteristics of small family-run farms. However, evidence shows that also large and business-oriented farms are reorienting their production, introducing differentiated products and diversified activities and giving a commercial footprint to their ability to produce public goods. Even more, it is often the entrepreneurial skills, which are connected to the age of farmers, their education level and their connection to the markets, that makes the difference in the shifting to a multifunctional business.
The working group will focus especially on the business aspects of multifunctionality, such as product differentiation (quality products, organic farming), and diversification (agri-tourism, social farming, recreational activities), by looking at the economic and social implications related to the choice of farmers of "going multifunctional".
The main questions which will be addressed in this working group are as follows:

- *How can multifunctional agriculture contribute to societal challenges?*
- *What is the contribution of multifunctional agriculture to farm family income?*
- *Does multifunctional agriculture strengthen or weaken the economic resilience of the farm enterprise?*
- *Does multifunctional agriculture increase social responsibility of farmers as well as their reputation and visibility within local communities?*
- *What are the economic relations and interdependencies between primary production and other on-farm activities? Are they in competition or do they support each other in the overall farm business and income production?*
- *What are the effects of production cost and farm business of the choice of "going multifunctional"?*
- *To what extent multifunctional agriculture may change the identity and the entrepreneurial skills of farmers?*
- *Which is the role of public support in favouring the development of multifunctional agriculture?*

By addressing these questions the working group aims at exploring under what circumstances (internal and external factors) multifunctional agriculture may become a driver of social change and economic growth at the farm level. Proposals based on a micro, meso and macro founded analysis are welcome, but also papers that offer a comparative analysis of case studies, in different businesses or in different areas of the same country or different countries.

Convenors:
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Comparison of UA business models – empiric study on Italian and German case studies

Bernd Pölling[1], Giulia Giacche[2], Biancamaria Torquati[2], Wolf Lorleberg[1], Chiara Paffarini[2]

***Abstract* – Business models of Urban Agriculture have to be different from rural ones. Specialisation, differentiation and diversification are characteristic and necessary business models of Urban Agriculture to stay profitable on the long term under challenging city conditions. This not representative empiric study of 36 Italian and German urban farms offers detailed farm insights from an economic point of view. Most common Urban Agriculture business models of this empiric work are first heterogeneous local food farms and second social farms, which integrate direct marketing in their farm concept. The interviewed farms belong mainly to the two models diversification and differentiation.**

***Keywords* – entrepreneurship, local food farms, urban farming, diversification, differentiation, social farms.**

INTRODUCTION

Agriculture is strongly influenced by urbanity (Heimlich and Barnard, 1992). Urban Agriculture (UA) is integrated in the urban socioeconomic and ecological system (Mougeot, 1999). This distinguishes it from the rural counterpart. Urban environments cause advantageous as well as disadvantageous framework conditions for the agricultural sector in general and more precisely also for different farm business strategies.

Already Gardner (1994) named high-value crop production, appropriate marketing apart from regular food and non-food commodity markets and the provision of various services as suitable business strategies in urban areas, which has been confirmed by additional theoretical and empiric research (Zasada, 2011). Common business strategies of the rural area, like enlarging the resources farmland and livestock units, is not or very rarely possible in urban settings. Therefore, farm enterprises have to adjust to the urban conditions by stepping into appropriate business models aiming to stay competitive and profitable. Otherwise they have to give up or turn into part-time farming on the long term. The limited and further shrinking availability of affordable land necessitates intensification in production, higher margins by using non-commodity markets and entering services as revenue streams. These strategies fit to the typical business models of UA specialisation, differentiation and diversification (van der Schans, 2010).

METHODOLOGY

Within the empiric study on UA's business models an interview-based survey following a standardized questionnaire scheme was carried out to detect characteristic business models. The survey was applied in Italy and Germany. 21 Italian and 24 German case studies are analysed by using the typology proposed by EU COST-Action "Urban Agriculture Europe" (UAE). This typology differentiates urban food gardening, which is mainly not oriented towards economic profitability, from commercial urban farming. 36 of the 45 interviewed case studies are commercial farms, while the remaining nine interviewed cases are urban food gardening cases.

In this research we focus on commercial urban farms, which are further subdivided in: local food, leisure, educational, social, therapeutic, agrienvironmental, cultural heritage and experimental farms (EU COST-Action UAE, 2015). These subcategories were used here in an iterative way by considering not only the major business but also the complementary business lines for the 36 urban farms.

This procedure of linking major and secondary business lines keeps the method easily accessible, but does not oversimplify the aim to characterise typical business models.

RESULTS

14 of the 36 commercial urban farms were interviewed in Italy (Fermo, Lecce, Perugia, Pisa and Rome) and 22 in Germany (Ruhr Metropolis, Münster and Aachen). The classification shows a heterogeneous pattern of urban farms, but reveals also some clusters, which are evident in both countries.

The most evident clusters in both countries are heterogeneous local food farms and farms, which combine social care with local food production (s. figure 1). Seven Italian and 12 German farms belong to the local food cluster. Although these farms are all highlighting direct marketing concepts, they are heterogeneous in terms of complementary business lines. Based upon this, most common is the combination with leisure, educational and social business components.

Four Italian and five German farms focus on social care in different ways, but offering adapted places to live and work for disadvantaged people is pronounced the most. Social farming is often combined with local food provision. Furthermore, these farms are all certified organic. This enlarges the revenue streams and reduces the dependence on public funding for social work. In general, customers' willingness to pay for food increases when it is produced with regional, organic and social claims. Two Italian farms include even urban food gardening (community garden, family garden).

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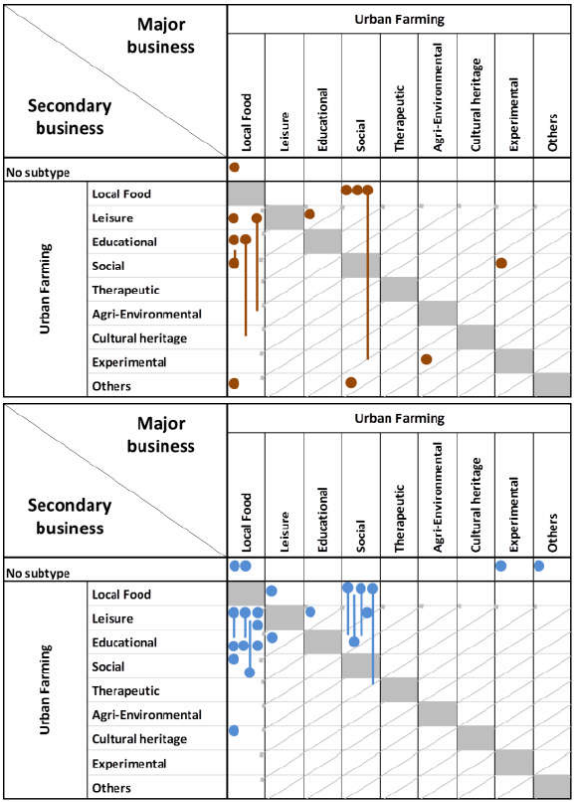

Figure 1. Classification of urban farms from Italy (top) and Germany (bottom), attached lines indicate third business strategies.

Discussion

The conducted survey is limited to 36 cases and not representative, but offers some hints about UA's business models in Italy and Germany. The business strategies, which are named to be most suitable in urban environments, are high-value production, marketing apart from regular agricultural commodity markets and provision of services (Gardner, 1994; Zasada, 2011; Zasada et al., 2011). The results of this survey are in line with these statements. The strategy, which is pronounced most, is local food. Many of the analysed urban farms use – in one way or the other – direct marketing to differentiate from the regular commodity market. One interesting finding of this survey is that many local food farms integrate complementary business lines into their farm model to add revenue streams.

Social farms, which are in Italy and Germany mainly re-financed for their social work by public funds, use direct marketing of organic products as additional income sources. The relative importance of social farms is overrepresented in this survey. Nonetheless, it is more important in or close to urban areas, where number of (possible) clients is higher (van der Schans, 2010). Social farms are interesting on the one hand for farms willing to integrate care taking and on the other hand also for social institutions willing to step into farming to create supportive conditions for the clients.

Most of the interviewed farms belong to the business models differentiation or diversification, or a mixed form of both. Straight specialisation – e. g. in production and marketing of one individual crop – is rarely represented in this survey, but it is partly integrated in case studies of differentiation and diversification as a secondary strategy to reduce costs.

Conclusion

UA is in different ways adjusted to specific urban conditions. Heterogeneous local food farms and the integration of local and organic food production in social farming business models are most frequent within this survey. The empiric work from Italy and Germany fits into scientific findings that UA has to specialise, differentiate or diversify; or to combine these alignments.

The survey is bounded to a limited number of case studies and offers some insights in UA's business models, but is not representative. Further empiric research is required to close the knowledge gap on UA's business models.

Acknowledgement

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Short chain approach and family farms: from acknowledgement to capacity building. The case of Alessandria Province

Borsotto P.[1], Cagliero C.[1], Pastorino G.[2]

Abstract **- The process of modernization and globalization of production has led to a multitude of innovative forms of organization of food chains and the family farms have to choose its own strategy. The aim of the study is to analyse, on a sample of farms in the Province of Alessandria, the farmer's choices in order to intercept requests of consumers in terms of quality and delivery. The main results highlight the need to evaluate the correct values of the prices and to assess the production and delivery costs in order to stabilize the profits. The study underlines the main key elements to be considered in deciding to use short chains of sale and which channels.**

Keywords **– food short chain, multifunctional agriculture, family farms**

INTRODUCTION

The Italian food system faces increasing competition and the reduction of the "safety net" provided by the CAP.

The trends of the last two decades, thanks to the role of EU policies, push to a new model of multifunctional and diversified agriculture (Henke, 2004). The process of modernization and globalization of production and trade led to a multitude of innovative forms and length of food chains. The farm, once abandoned or decreased the links with traditional distribution, is now faced with new choices on business and sell strategy. This is very relevant in the view of the so called "squeezing agriculture" process (Van der Ploeg, 2006), where the farmer is compressed between the rising costs of inputs and the decreasing prices of wholesale markets. Family farms, especially, could find in the direct selling a concrete strategy to react in this context. The aim of the study is to offer a decision-making tool to family farms in order to support the short chain path.

MATERIALS AND METHODS

The project provides a first part, based on a desk analysis of the literature and the analysis of information sorted out from primary data (ie. Census) or administrative data (Piedmont Region). This step allows you to identify the types of short chain more relevant on the ground and the preparation of a SWOT analysis on the key elements of the short chain path.

The second part follows an approach on field, through a specific survey on a series of case studies (20), regarding the most interested sectors in the phenomenon in the Province of Alessandria. The survey methodology defined by the project is the interview via questionnaire and semi-structured interview to the family farms that presently using the short chain as the core of their distribution approach, in order to gather and focus the real possibilities to undertake a short chain path.

The questionnaire is built using the open source SurveyMonkey and it consists of nine questions, related to the legal status, the management, the production types, the structural and economic sizes, the sale channel applied (Cicatiello e Franco, 2008).

For each product it is required to specify which form of short chain is used and how much of the productions follow these channels; for each work unit is asked how much time is devoted to short chain schemes. To confirm and extend the results of the survey, we have interviewed some key stakeholders.

MAIN RESULTS

The first outcome coming from the desk analyses is the identification of a SWOT matrix (Fig.1) that allows a judgment of the key elements to be taken into account in the process of short chain, in the light of the information, qualitative and quantitative, gathered and the characteristics of this model of sale.

STRENGTHS	**WEAKNESS**
production quality	lack of variety of products
low costs and good prices	inefficiency in some costs
favorable location	location not adequate
ability to team up	product quality varies widely
ability to engage with customers	staff shortages for sale
trained personnel for sale	lack of specific training
financial resources	lack of financial resources
internal logistics	no critical mass
OPPORTUNITY	**THREATS**
grants and loans	entry of new competitors
information, TA and training	increases in production costs
communication in favor of short supply chains	promotion of local products in super and hypermarkets
proximity to agritourism or farmer' markets	accessibility to products at much lower prices
proximity to a tourist attraction or events	continued crisis in consumption
educational programs in schools	possible restrictions in authorizations or disciplinary
website well marked	

Figure 1. The SWOT MATRIX.

The second part of the project has offered some concrete outcomes coming from the survey in order to highlight the ley elements and provide operational guidelines to family farms interested in the possibility of adopting short chain paths. The results of the survey are in line with the analyses coming from the literature about the direct selling in Italy.

The legal form is predominantly individual (40%) and the most widespread form of management is

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direct conductor (2/3); followed by the one with prevalence of family (1/5); only a tenth of the surveyed farms are presenting a prevalence of wage earners. It is small businesses: half have less than 2 hectares of UAA. The interviewed farms also show limited size of turnover: over half of the companies declare a turnover of less than € 15,000.

The activities of short chain sale employ more than three-quarters of the conductors, two-thirds of family members; one-fifth of farms has staff dedicated mainly to the management of the company store.

The main sectors involved are the vegetable and the livestock and then arable crops, wine and beekeeping. Almost 90% of the farms surveyed make use of direct sales, almost half provide Solidarity Purchasing Groups (SPG), one third have a farm shop or use e-commerce, and finally a fifth sells its product at Farmer's Market.

The cross-analysis between farming system and channels of short chain reveals that the vegetables are mainly sold using direct sales (60%), followed by SPG (25%). Farms with arable crops, wine and meat mainly use the direct sales, with or without a farm shop (Table. 1).

Table 1. Weight and channels through short chain (%)

Product	% short chain	1 Chan.	2 Chan.
Tomatoes	50,0	DS	FM
Onions	28,8	DS	SPG
Potatoes	50,0	DS	SPG
Courgettes	62,5	DS	-
Wheat	100,0	Other	-
Corn	15,0	DS	SHOP
Wine (VQPRD)	55,0	DS	Other
Wine	20,0	DS	-
Honey	22,0	DS	SPG
Meat	52,5	SHOP	Other

DS direct sales; FM Farmer's Market; SPG Solidarity Purchasing Groups

MAIN CONCLUSIONS

In order to accompany family farms in the implementation of a project of short chain, we have provided a guideline, starting from the farm characteristics and based on a model "decision tree", that can suggest which path to take. The results analysed, indeed, highlight the importance of using different management approaches and different sale channels.

When selecting the sales channel, the farmer should consider at least two key items:

- the analysis of the organization, to evaluate the advantages and constraints that arise from choices made;
- the analysis of the production costs, to calculate the cost-effectiveness of a short channel and to allow a clear communication to the consumer. Under this point of view, the results obtained highlight the need to evaluate first of all the equity of the prices and check the production costs, in order to stabilize the profits and identify intrinsic elements that could justify the higher value of the product sold in direct way. The real focus is to drive the consumer to understand both the organoleptic quality of the products and the intangible quality he can perceive. The entrepreneur must then assess (Fig. 2):
- the structural characteristics of the farm;
- the "gap" between the current characteristics and those needed and, therefore, the amount of any investment and the cost of the training;
- sales price: consumers in general expect a price competitive, but not too low because often a very low price is associated with poor quality; the consumer is still willing to spend slightly more in the case of local specificities;
- degree of involvement in the short chain: all the goods produced or only a quota? It depends on the evaluation in economic terms of the margin from case to case;
- target customers: local or regional level and then tourists, urban population and emigrants returning home.

Using a concrete compass for orientation, the family farms can still find the choice to shorten the sales channels a concrete response to the risk of being "squezzed" within the value chain and to retrieve strategic elements of competitiveness.

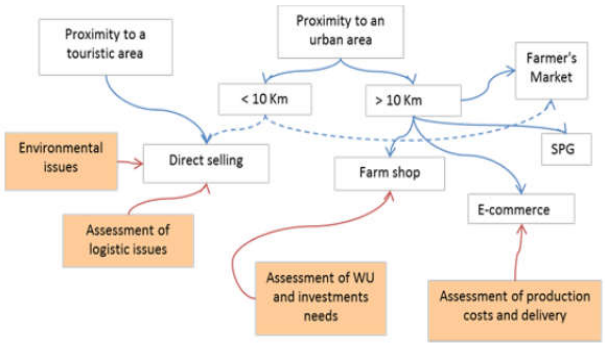

Figure 2. The main elements characterizing the choices within the short chain

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Explaining direct sale as a prevailing marketing strategy: data from Tuscany farmers

Bartolini F., Galli F., Brunori G.[1]

***Abstract* – In recent years a growing number of farmers has implemented alternative marketing strategies, based on the internalisation of value chain segments. Such tendency is driven by the low level of prices paid by retailers, the pressure to diversify marketing strategies to reduce risk exposure and the change of consumer's preference towards short chain or local products demand. The present paper aims at investigating determinants of adoption of farmers' direct selling strat-egy. We investigate Tuscany farmers using data collected during the 2010 census. A double hurdle model allows to estimate adoption of direct selling as a two steps model: firstly identifying the determinants of the adoption of a direct selling strategy and then the determinants of the share of farmers' production sold directly to consumers, among all other commercialisation forms. Preliminary results shows that motivation and skills are main determinants of direct sale as well as the closeness to urban areas, confirming demand driven effects.**

***Keywords* – direct selling; econometrics; distances**

INTRODUCTION

In recent years a growing number of farmers has implemented alternative marketing strategies (Galli and Brunori, 2013). Marketing strategies have been studied by agricultural economics, rural sociology and geographer or regional sci-ence literature. Each literature branch has paid attention to specific sets of variables, which were considered relevant to describe farm behaviour with respect to the adoption of a particular marketing strategy. Agricultural economics literature has investigated the different marketing strategies of farm productions. The tendency is driven by the low level of prices paid by retailers, the pressure to diversify marketing strategies to reduce risk exposure (Park et al., 2014) and the change of consumer's preference towards short chain or local products demand (Caputo et al., 2013). The literature highlights the effect of risk reduction in the selection of a portfolio of alternative marketing strategies or in diversifying downstream connections, the role of difference in transaction costs between alternative marketing strategies, and information as a motivation of the coordination mechanisms and the response to the agricultural policy. The paper investigates the determinants of a direct selling strategy. The main novelty is the simulation as a two steps process. Hence, the model firstly identifies barriers or enabling factors that affects the deci-sion to entry in the direct market (both though on-farm selling or through farmers' markets), and then the share of production sold directly to consumers within this channel. Due to expected differences in determinants among direct selling options, we apply a separated model considering the share of production sold through on-farm direct selling and through off-farm direct selling (i.e. farmers' markets).

METHODOLOGY

Several modelling options are available in agricultural economics literature to assess determinants of farmers' strategies. The application of these is a growing topic in the agricultural economics fields, due to the ability to cope with farmers' behaviours (Amanor-Boadu, 2013).There is a large taxonomy of available models, depending on distribution and functions assumed (Greene, 2003).

In the paper we apply a double hurdle model. The model allows to explain adoption of direct selling as a two steps model: firstly identifying the determinants of the decision to adopt a direct selling strategy (i.e. whether to invest or not in direct selling) and then the determinants of the share of farmers' production sold directly to consumers, among all other commercialisation forms. For a detailed model description see Greene (2003).

DATA USED AND EXPLANATORY VARIABLES

Data used belongs to Tuscany Agricultural Census (2010). Explanatory variables belong to five categories: location, household, farmers and policy. The first category (i.e. location) includes location in zones as classified for RDP purposes. Tuscany is classified into 5 zones: the first includes farms located in municipalities with the highest density of inhabitants (i.e. urban areas, poli_urb). The second (rur_int) includes farms located in rural areas (density lower than 150 inhabitants per square km) but with intensive agriculture. There are three other zones that specify location in rural areas. These zones differs by increasingly socio-economic concerns: rural areas in transition (rur_trans), declining rural areas (rur_desc) and rural areas with development problems (rur_probsv). The second category contains the household's characteristics, and it includes: the share of farmers who is living on the farm (live_on), the relation between household and hired labour. Two variables are considered in this regard: household labour used on-farm (ftefam_farm) and the average value of external labour used on-farm (fteext_farm).The third category of explanatory variable considers farmers' characteristics. These characteristics provide information on farmers' education and age. The fourth category includes farm characteristics: production typology such as organic production (d_org) and whether the farm has a web site or does e-commerce (informat). Finally, the amount of payments received under first pillar (decoupled) and in the three RPD axes represent the policy relevant variables.

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RESULTS

The results are presented in Table 1 and table 2. Table 1 contains the distribution of the share of direct sale among Tuscany farmers. Farmers that self-consume the production are omitted.

Table 1. Farms' distribution based on share of direct selling

Share of production	Sold on farm		Sold off-farm		All	
	#	%	#	%	#	%
0	36053	75	44604	92	34113	71
<25%	2162	4.4	954	1.9	1859	3.8
26- 0%	3323	6.9	1153	2.3	3541	7.3
51- 75%	965	2	319	0.6	1270	2.6
>75	5582	12	1239	2.5	7488	16

Table 1 shows that direct selling is a relevant strategy for Tuscany farmers, as one third of those farms who sell production adopt it. Among those, more than 50% sell most part of farm production and 15% of the total farms sell entirely the production directly to the consumers. Between the two alternatives, a larger share of farms directly sell the production on-farm. Table 2 presents the double hurdle model: in the upper sectionthe determinants of the binary variable (direct selling yes/no) while in the bottom part the level variable (share of production) are presented.

Table 2. Model Results

	ALL		on-farm		off-farm	
variable	coeff.	sign	Coeff	sign.	coeff	sign.
binary outcome						
poli_urb	-	***	-	***	+	***
rur_prob	+	**			+	***
live_on	+	*	+	***	-	***
p_axis1			+	***	+	***
p_axis3	+	**	+	**		
Sfp	-	***	-	***	-	**
hFTE_lab	+	***	+	***	+	***
level outcome						
d_org	-	**	-	***	+	***
rur_int					+	*
rur_decl	-	***	-	***	-	**
Uaa	-	**	-	***		
d_old	+		+		-	**
age2	+	***	+	***	+	***
edu_low	-	***	-	***	-	***
p_axis1	-	***	-	***	-	***
p_axis2	-	***	-	***	-	**
p_disacc	-	***	-	***	-	***

Variables which positively affect the decision to adopt direct sale (binary outcome) belong to location, farmers and policy categories. While the location in marginal area with developing problems positively affects the adoption, the location in urban areas has puzzled effects among on-farm and off-farm direct sale. The results seem to confirm that diversification strategies represent a strategy to overcome area constrains (Bartolini et al. 2014), while closeness to urban areas positively affects only the sale through the off-farm channel (i.e. farmers markets). The amount of household labour allocated on-farm has positive influences on the decision to implement direct marketing strategy, due to the working effort needed and the possibility to stabilize income.The binary outcome model shows strong influences of the Common Agricultural Policy. The model returns influences of different direction between the first and second pillars. The share of products that is sold directly (off-farm) is positively influenced by organic certification. This seems to confirm existing literature pointing out that consumers that buy directly on farm are motivated by the trust in the producer and do not rely on quality certifications. Farmers' characteristics such as education and age are determinants of direct selling, with similar pattern between the alternatives. Highly educated and farmers with experience have high probability to sell the larger share of the production through a direct selling strategy. The impact on the share of production sold through direct sale is negatively affected by policy variables.

CONCLUSIONS

The paper investigates direct marketing strategies determinants. Results confirm literature findings which identify in motivation and skills the main determinants of marketing strategies based on direct sale (Uematsu and Mishra, 2012; Park et al., 2014). Location and level of payments seem to have a prominent role in explaining farmers' marketing strategies. While first pillar payments seem to reduce the probability to adopt a direct marketing strategy, the second pillar affects only the deci-sion to be involved, while negatively impacts on the share of production sold directly. This is quite surprising given the high emphasis on direct sale in regional priorities and policy debates. However it can be explained by the high transaction costs linked to the participation in RDP measures and by pure rental seeking behaviour for some farms. Thus, our model results claim the need for a coherent policy encouraging on-farm invest-ments.

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An evaluation of investment in Agritourism: a case study of Puglia Region

D. Caruso, F. Contò,V. Namiotko[1]

***Abstract* – The aim of this research is to identify the impact of investment on the diversification into non-agricultural activities. During the seven years of Rural Development Programme implementation, rural tourism received great sums of support. The measure 311 of the Axis III, "Encouragement of rural tourism activities", can be identified as a special RDP measure. The research relies on data from the managing authority of the Puglia Region and covers family farms. Cluster analysis was used for the research. The research found three homogeneous clusters.**

***Keywords* – local and rural development; investment appraisal; measure.**

INTRODUCTION

In the context of the EU and the CAP, rural development aims at safeguarding the economy of the countryside by supporting programmes to invest, modernize and support activities – both agricultural and non-agricultural - in rural areas for improving growth process and income situation (Farm Accountancy Data Network, 2010).

Eurostat data on the Entrepreneurial Income of Agriculture, for the period 2005-2013, confirm that revenues for the agricultural system, fluctuated considerably. In 2013 there were levels of EU-15 income, slightly below the level as 2005.

From the base year of 2005, the EU- 28 index rose for two consecutive years, before falling back in 2008-2010 (at the height of the financial and economic crisis) strongly below the level as 2005 (Ciani, 2012). Also in Lithuanian rural tourism sector was negatively affected by the 2008 recession, indeed, the impacts exhibited relatively high elasticity of demand for rural tourism, there is a need for the further development of appropriate marketing and information dissemination strategies aimed at both middle and lower income consumer, in the paper ofBaležentiset al. (2012).Thereafter, the index of Entrepreneurial Income of Agriculture rebounded, with relatively rapid growth in 2011 and 2012 (Eurostat, 2013).

The increasing development of non-agricultural activities in rural areas, contributed largely to the formation of a "new rurality" characterising more and more the rural regions of Europe (Kasimis, 2010). The Measure 311 (Axis III), of the Rural Development Program adopted by Region of Puglia has main aim of pursuing, the measures under axis 3, that should contribute to the overarching priority of the creation of employment opportunities in rural areas in non-agricultural activities and services through investments at diversification into non-agricultural activities, in order to support farm businesses restructuring through the development of diversified activities that provide alternative income sources. In particular, Action 1 is related to investments for thesupply of agritourism accommodation in the business context in accordance with applicable regulations; The new Rural Development Policies of the European Union for 2014-2020, aim at contribut-ing to the achievement of smart growth in agriculture and multifunctional farming (Sandu, 2014; Scuderi et al., 2014). This study, represent a preliminary analysis on the successful positive influence for farmers diversifying its activities with the agritourism, through the investment in non-agricultural activities.

There is therefore a solid support that investment in agritourism are particularly implemented for small and medium-sized enterprises.

METHODOLOGY

The aim of this work is exploratory (Easterby-Smith et al., 1991), it represent a preliminary study for evaluating the role of investment in non-agricultural activities, which tool to improve the economies in rural areas. With this in mind, we have gathered data from the Managing Authority of the Rural Development Plan of the Puglia Region which provided us with a database containing information at firms level. More specifically, the database contains information on those firms which requested to be admitted to the benefits of Measure 311, Axis III, of the Rural Development Plan 2007-2013 through the public call. The analysis has been implemented through the use of classification techniques automatic (cluster analysis) that led to the identification of groups of farms, based on similar characteristics and distinctive. The analysis of classification consists of a broad set of techniques through which you intend to group the statistical units (agricultural holdings) in classes is not known before, such as to maximize and minimize the intra-group similarity between different groups (Everitt, 2011). Data analysis has been performed using the software SPSS it was used the k-means cluster analysis algorithms (Hartigan, J. A. 1975).

RESULTS

A first look at the data achieved by the Managing Authority above-mentioned enables us to observe how 411 firms have actually been admitted to the benefits of the measure in question. For each firm the database reports the following further information recorded at the time of the application: a. amount of the proposed investment; b. public aid granted; c. number of family and extra-family workers; d. revenues; e. production costs; f. farm size, g. investment implementation; i. municipalities.

The individuated variables are as follows: Investment, Farm size and Municipality, when the first two variables are quantitative, while the third variable is not quantitative, we can see on table 1.

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Table 1. Statistical variables subject of observation

	Description
1 Investments	the total amount of the investment proposed by the firm which derives from the sum between public aid and private capital
2 Farm size	the size of the firm in ha
3 Municipalities	is a geographic area when the firm has the activity

We found three clusters of agricultural firms between investment, farm size and for municipality with a distinct set of options seen as for farm size: small size (n=124), medium-size (n=218) and big size (n=69), table 3. All clusters are significant for study of the investment appraisal in non-agricultural activities.

The cluster analysis was performed for the individuated variables to identifying homogeneous groups, we can see in the table 2

Table 2. Cluster analysis for agritourism investments in relation to farms size.

Final Cluster Centers			
	Cluster		
	1	2	3
Farm Size (ha)	36.62	42.39	56.30
Investment (€)	90,109.09	242,811.39	368,936.33

The ANOVA procedure was carried out and the results showed as confirm the "F" value (p-value <0.001) significant between clusters, so the clusters is very homogeneous for groups.

Table 3. Number of cases for Firms.

Cluster		Number of case
1	Small-size	124
2	Medium-size	218
3	Big-size	69
Valid		411
Missing		,000

A general comment on the data analysed that we have gathered so far is reported in the table 3, in this sense, a very simple descriptive and preliminary analysis of the data obtained is proposed, we can say that there are higher investments relative medium-size farms (n=218), the farms belonging to the region system are characterized by a very significant productive potential which is not yet fully expressed, a very modest diversification of farm's activities.

CONCLUSIONS

Research is exploratory, and then, by its nature, needs further empirical validation. This investments in non-agricultural activities can lead to develop and promote rural areas and, so increase the economies in rural areas. The investment in agritourism was experienced by entrepreneurs as an opportunity to recover value added, focusing on the transformation of commodities, almost always typical and quality craftsmanship, to defend themselves from the volatility of agricultural prices fueled by the frequent crises of world agricultural markets. The theoretical considerations established at the beginning of this paper drew the attention to the importance of investment in the growth process, especially when one is dealing with less favoured regions. We will conduct further research for a better understanding on the differences between clusters and the factors most of influence for the farmer in the perception of his Public aid and the impact at firm level.

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Options for promoting farm cooperation in water use and its economic impact

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***Abstract* – This paper studies cooperation in water use between farmers in one of the irrigated areas of Uzbekistan by using cooperative game theory model. The formation of coalitions between three farmers is analyzed using a cost game (three cooperative communities) for water service costs spent by farmers. We show that the farm cooperation will decrease the costs. The game theory solution concepts are determined by application of Shapley value method.**
***Keywords* – cotton, wheat, irrigation system, cooperative game theory, water service costs.**

INTRODUCTION

Water resource system management and water distribution among water users remains the centerpiece of organization of irrigated agriculture of transition economies such as in Uzbekistan, Central Asia. Few options exist in a newly restructured farming system to organize water use between farmers in a cooperative way. Conflicts in water use are common especially in water scarce years between farms located in the head, middle and end of an irrigation canal. Due to lack of measuring and monitoring tools and absence of regulatory and enforcement framework, upstream farmers can withdraw large volumes of irrigation water at the expense of downstream farmers thus affecting the productivity and economic performance of the latter. The value of water service fee that farmers pay to their respective water user associations does not reflect the actual use of irrigation water. Thus, the farmers do not have economic incentives to save water: Those who get water first can use water as much as they want at the expense of others. From another side, the Soviet experience of economic losses, poor yields, and lack of decisionmaking freedom in the collectivized system contributes to the farmers' hostility towards modern forms of cooperation, e.g. in water use. Knowledge or good examples of how cooperation can be organized and, most importantly, knowledge about its economic benefits are scarce. Therefore, in this study we look at the farmers' water use decisions to identify more profitable strategies in collective water allocation. We apply a cooperative game theory in a farm cooperative model using an example of an irrigation system of the Samarkand province, Uzbekistan.

DATA AND METHODOLOGY

The data for this study was collected in the Samarkand province, a region located near Zarafshan River with agriculture entirely dependent on irrigation water from the river. The water is managed by several water users associations. The farm-level data was collected from interviews of 15 managers of cotton-grain cultivating farms. The information on water flow and use was collected from annual reports of Zarafshan Basin department of irrigation systems.

METHODOLOGY

Game theory comprises two major fields: noncooperative and cooperative games. In our study we use a cooperative game theory model to look how cooperation between players (cotton-grain producing farmers) in resource (irrigation water) use may produce higher economic benefits. Cooperative games are also called coalitional games. A coalitional game with transferable utility (TU game) is a pair (N ; v) such that:

N = {1, 2 ... n} is a finite set of players. A subset of N is called a coalition. The collection of all the coalitions is denoted by 2N.

v: 2N $\rightarrow$ R is a function associating every coalition S with a real number v(S), satisfying v( )=0. It is called the coalitional function of the game.

The real number v(S) is called the worth of the coalition S. The significance of this is that if the members of S agree to form the coalition S, then as a result they can produce (or expect to receive) the sum of v(S) units of money, independently of the actions of the players who are not members of S (Gerichhausen et a. 2009, Maschler et al. 2013).

There are some of the methods used for determine solution concepts of the game. For example, they are Shapley Value, the Core, the Nucleolus, T- value, etc. In this study, the Shapley value method was investigated to allocate gains from cooperation.

Given a coalitional game (N ; v), the Shapley Value divides payoffs among players according to:

$\varphi_i(N, v) = 1/N!\Sigma_{S\subseteq N\setminus\{i\}}|S|!(|N| - |S| -1)![v(S \cup \{i\}) - v(S)]$. for each player i.

The cost game is used where the calculation of costs saved by a coalition is important. Saved costs are determined as follows:

$$V(S) = \sum_{i\subseteq S} c(i) - c(S) \; \forall \, S \in 2^N$$

RESULTS AND SOLUTION CONCEPTS

Based on surveys, a simple cooperative model was applied for selected three different farmers (Farm A, Farm B and Farm C) which are situated in different distance from the root of the irrigation system (Fig. 1). All farmers are consumers of "Ak-Karadarya" Irrigation System Department.

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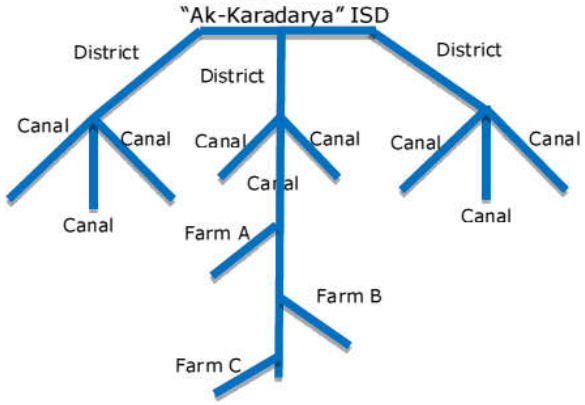

Figure 1. Location of farmers from the root of irrigation system.

We may write water distribution among the three farms as: ISD border ->Farm A->Farm B->Farm C. In that case, the water use by Farm A can affect water access by Farm B and Farm C and thus their crop production and profits. Since we assume that all farms maximize their profits, under water scarcity, cooperation can be useful to normalize their utility (Madani 2010). Farmers should pay for water service to WUAs. The value of water service fee does not reflect the actual use of irrigation water, so the farmers do not have economic incentives to save water. Besides water service, their main costs are seeds, fertilizers, technician costs, fuel, salary, electric costs, taxes and other costs.

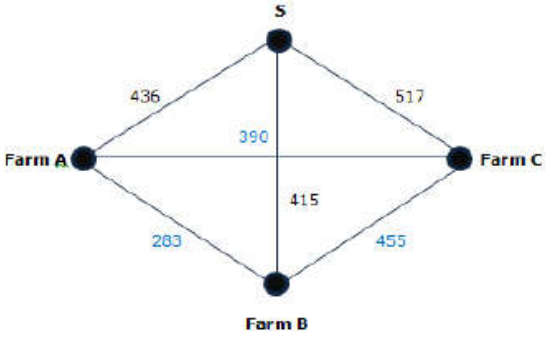

Figure 2. Costs for WUA service (USD[2]).

The average production costs per hectare of cotton and wheat were about 864 USD. In cooperation, farmers may have lower costs than when they decide on production and water use individually. By assuming this, we may apply a simple cost-game (three farms belonging to one WUA or three cooperative communities belonging to the same irrigation system) to decrease water service costs each partic- ipant and obtain the following results (Fig. 2). The results for the cost-game <N;c> are given in Table 1.

N =|{A,B,C}

Table 1. Value of costs, saved costs and Shapley values (USD).[a]

	$\|\{A\}$	$\{B\}$	$\{C\}$	$\{A,B\}$	$\{A,C\}$	$\{B,C\}$	$\{A,B,C\}$
$c(S)$	436	415	517	283	390	455	1153
$v(S)$	0	0	0	153	128	62	215
$\varphi(v)$	98	65	52	X	X	X	X

[a] $c(s)$-costs of coalitions; $v(s)$-saved costs of each coalitions; $\phi(v)$-Shapley value.
Source: Authors calculations.

In that game for coalitions {A,B}, {A,C}, {B,C}, we get respectively the minimum value 698, 826 and 870 USD. The grand coalition brings 1153 USD. After cooperation, Farms A and B may save 153 USD costs from the WUA service fees compared to their individual payments. Respectively, Farms A and C would have 128 USD, and B and C 62 USD of costs savings. Furthermore, the grand coalition can save 215 USD. The Shapley value (φ (v)) of saved costs (v(S)), would be 98, 65 and 52 USD respectively.

CONCLUSION

Cooperation on water use is especially important in irrigated agriculture prone to water scarcity. The results of our game theoretic exercise show that the grand coalition will bring higher payoffs not only to the downstream farms, but also to upstream farm.
To conclude, the water use cooperation can be useful for all participants and can be used for sharing not only water service fees, but also other costs such as costs related to technicians, fuel, pump operation, and electricity.

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Urban Agriculture in Metropolis Ruhr characteristic business models

Bernd Pölling[1]

***Abstract* – Farming is influenced by urbanity and integrated in the urban socioeconomic and ecological system, which distinguish Urban Agriculture from the rural counterpart. Urban Agriculture's characteristic business models are oriented towards specialisation, differentiation and diversification, which imply strategies like high-value crop production, marketing apart from regular commodity markets and provision of various services. These characteristics are also identifiable in Germany's largest agglomeration Metropolis Ruhr. The polycentric pattern of the case study region results in a rather large spatial relevance of farmland. One third of Metropolis Ruhr is farmland, which is focusing on the peri-urban outskirts but is also integrated in the most densely populated core zone. The more urban the environment here the stronger is agriculture aligned to typical urban business models and strategies. Increasing awareness and knowledge on Urban Agriculture enhances advisory services and decision making of farms in urban environments. Furthermore, productive and profitable Urban Agriculture has the potential to become a key stakeholder for sustainable city development.**

***Keywords* – commercial urban farming, specialisation, differentiation, diversification, profitability.**

INTRODUCTION

Urban Agriculture (UA) plays a non-deniable role for both, the agricultural sector as well as cities and metropolitan areas. Global estimations of the spatial impact of UA result in surprising values: globally 60% of the irrigated and about one third of the rainfed cropland is located in and around cities (Thebo et al., 2014).

Urbanity is strongly influencing agriculture and UA is integrated in the urban socioeconomic and ecological system, which distinguishes it from the rural counterpart (Heimlich and Barnard, 1992; Mougeot 1999). The influences of cities lead farms into two contrasting directions: First, in case the disadvantages prevail, they give up or turn into part-time farming with principal incomes outside agriculture, or, second, farms make use of the urban chances and adapt their businesses to the city conditions to maintain profitable. High-value crop production, direct marketing and the provision of services linked to agriculture are named here to be most appropriate to stay competitive (Gardner, 1994).

These businesses are oriented towards specialisation, differentiation and diversification to step out of the regular agricultural commodity markets.

Despite the rapid industrialisation and urbanisation process in Germany's largest agglomeration Metropolis Ruhr (Ruhrgebiet), agriculture plays still an important role. About 33% of the metropolitan's area is farmland. Most of it is located in the periurban fringe, but the polycentricity interlocks commercial farming also with densely populated areas in the very centre of Metropolis Ruhr. Here UA's business models are adjusted to the advantageous as well as challenging influences on farming.

Specific knowledge on successful business models and special features of UA supports agricultural advisory services and farms. Furthermore, economic viable UA is able to become a key stakeholder for sustainable city development by contributing to the urban food sovereignty and urban economy as well as by reducing public expenditures for landscaping.

METHODOLOGY

Firstly, a literature review screens characteristic business models of urban agriculture, which are in a second step complemented with findings from Metropolis Ruhr. The used statistics to detect the agricultural characteristics of the case study region are based on publicly available data, mainly the Agricultural Census 2010. The key outputs of the analysis are contextualised with results from the conducted literature review for confirmation or disproof. Advanced knowledge on UA supports decision making and advices in entrepreneurial farm developments.

URBAN AGRICULTURE IN METROPOLIS RUHR

More than five million people are living in Metropolis Ruhr, which is summarized in the administration unit "Regional Association Ruhr" of 53 communities.

Some 3,600 farms are cultivating about 145,000 ha, so that one third of the metropolitan area is used for agriculture and horticulture. In the urban municipalities, which are building the core zone of Metropolis Ruhr and characterised by a high population density of on average nearly 2,000 inhabitants per km², farmland is still an important land user covering about 20%. Farmland is part of the greenbelts and corridors, which structure even the most densely populated areas and have to be explained due to the polycentric pattern.

Although total population and industrial power are not increasing or even shrinking, Metropolis Ruhr's agriculture loses some 500 hectares every year, which intensifies the competition for land both with other land uses and also between farms. The reduction of farmland is even more pronounced where farmland is scarcest namely in the urban municipalities.

Livestock farming is in terms of livestock densities and animal stocks of rather low importance, while horticulture is a significant business strategy of urban farms (s. table 1). Most of the horticultural production, especially vegetables and berries, is located in the central North of Metropolis Ruhr on rather light soils and in close proximity to a huge consumer market. The share of horticultural farms in the urban municipalities (11.2%) is twice the relevance of the

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Federal State NRW (5.5%). Farming in some of the metropolitan cities is even more strongly oriented towards high-value crop production with shares of more than 20%.

Table 1. Horticulture, direct marketing and equestrian services in Metropolis Ruhr compared to Federal State North Rhine-Westphalia (NRW) (Data source: IT.NRW, 2011).

Region	Horticulture farms (%)	Direct marketing farms (%)	Equestrian service farms (%)
Metropolis Ruhr	7.22	6.92	14.94
Urban municipalities Metropolis Ruhr	11.18	9.46	21.13
NRW	5.45	4.49	6.71

Direct marketing is another strategy for farms to increase revenues and is more often used with increasing urbanity. This marketing strategy, which is often connected with high-value crop production, is shortening the value added chain and allows business differentiation from regular agricultural commodity markets.

Furthermore, farms make use of the urban consumer market by offering various services, like recreation, education and health services, social care and landscape issues. An example of a service, which is very present in Metropolis Ruhr, are equestrian services. 15% of the metropolitan farms and even more than one out of five farms within the urban municipalities offer horse services as a business strategy.

Since a few years new forms with a stronger participation and integration of urban dwellers in farm production, business and marketing emerge. Pick-your-own, seasonal rents of gardening plots ('rent-a-field') and Community Supported Agriculture (CSA) show the increasing interest of urbanites in food topics and active gardening. This growing interest of city dwellers creates also new chances and business niches on the producer side.

DISCUSSION

Urbanity influences individual agricultural business models and the whole agricultural sector of a region (Heimlich and Barnard, 1992). Urban Agriculture is often oriented towards diversification, specialisation and differentiation by focusing on high-value production, appropriate marketing concepts and provision of diverse services (Gardner, 1994; van der Schans, 2010). Furthermore, innovations in these fields offer suitable business niches for farms. In general, these typical urban adjustment strategies in farming can be confirmed in Metropolis Ruhr. The more urban the environment, the more pronounced is the adjustment to characteristic business models. In the centrally located cities horticulture, direct marketing and services, like equestrian services, are of big relevance for the agricultural sector, while it turns more rural towards the outskirts of the polycentric metropolis. Participatory forms of farming, like 'renta-field' and CSA, are parts of business models or even as the key business model itself. These forms strongly support closer producer-consumer relationships, which is an important issue in metropolitan areas.

Better knowledge about the special conditions of urban environments is required for agricultural education, advisory and information services. Moreover, the recognition and consideration of productive andprofitable Urban Agriculture as part of the urban economy has the potential to significantly contribute to (more) sustainable city development in Metropolis Ruhr and beyond.

CONCLUSION

Agriculture in Metropolis Ruhr shows characteristic urban patterns, which focus on high-value production, appropriate marketing and service orientation. UA's main business strategies are specialisation, differentiation and diversification to maintain profitable under challenging and unstable urban frameworks. With a stronger emphasis of the economic contributions along with other societal benefits, UA is able to become a key stakeholder of sustainable city management and development in Metropolis Ruhr and also in other agglomerations.

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Does the multifunctional agriculture contribute to the farm family income? An analysis based on FADN survey

C. Cardillo, O. Cimino[1]

***Abstract* – In its most classic meaning, agriculture is seen as the primary sector that produces and provides food and fiber, but during recent years emerged a new model of agriculture, namely multifunctional, that provides the maintenance of the countryside, the vitality of rural communities and agricultural employment, the diversification of activities. The use of structural and economic information derived from different statistical sources, the 6th Agricultural Census and the FADN database, made possible to identify the different "representative farms" and to investigate how and how much the multifunctionality could influence the farm family income. The comparison between the results of conventional and multifunctional farm shows that the contribution of the multifunctional agriculture to the income of the family farmer has different effects depending on the characteristics of farms, their geographical location and their specialization.**
***Keywords* – multi-functionality, income, FADN.**

INTRODUCTION

In recent decades a new model of multifunctional agriculture has emerged, that is based on a farm able to produce a variety of goods and services and that aims to the integration of farm income, but also to the welfare of the entire community. The work aims to analyze the contribution of multifunctional agriculture to farm family income and investigate the differences in terms of structure, organization and expectations. We propose to use the concept of "representative farms", whose characteristics are typical of a population of Italian farms, in particular the structural features of the multifunctional farms, such as product differentiation (quality products, organic farming), and diversification of activities (agritourism, social farming, recreational activities and so on). In order to identify this "representative farm" (Cafiero et al., 2005; Cioffi and Sorrentino, 1997) we used data from the 6th Italian agricultural census, in order to estimate the potential groups of multifunctional farms, through the analysis of structural aspects. Furthermore, we utilized the data from the Farm Accountancy Data Network (FADN) to calculate the contribution of multifunctional agriculture to farm family income values.

METHODS

In order to determine the contribution of multifunctional agriculture to the income of the family farmer, we identified those agricultural systems for which multifunctionality appeared to be more evident, namely only the farms that have other gainful activities. Based on the information derived from the 6th General Census of Agriculture (ISTAT) we identified 76,148 multifunctional farms, that we aggregated at macro-region territorial level and we analyzed in terms of economic dimension (Standard output), Utilized Agricultural Area (UAA) and Type of farming. Finally, for each Macro-region, we built a multifunctional representative farm. In the same way we utilized the structural and economic information derived from the FADN database, for the accounting year 2013, to identify 22 representative farms, among 1,064 multifunctional farms in the sample, and measure the weight of multifunctional activity on the family income. Similarly we stratified the conventional farms in order to compare their results with those of multifunctional farms.

RESULTS

The geographical distribution of multifunctional farms shows that more than half of them are localized in Northern Italy, about 21% in the South, 19.4% in the Centre and 9% in the Islands. In addition, main type of farming are: cultivation of permanent crops (over 30%), herbivores (22.9%), arable crops (22.4%), and only 6% in horticulture. One third of the farms are positioned in the medium-large economic class, 20.4% in the medium class, 19.4% in the small class and the remaining 15% are in the size small to medium.

Table 1. Distribution in percentage of farms according to economic size and type of farming

	Small	Medium-small	Medium	Medium-large	Large	Total
Field Crops	28,3	19,2	17,5	29,0	5,9	100
Horticulture	18,4	23,7	10,5	26,3	21,1	100
Permanent Crops	18,4	14,2	21,5	40,2	5,7	100
Livestocks	10,8	10,8	21,5	33,1	23,8	100
Mixed	24,4	17,8	24,4	28,9	4,4	100
Total	19,4	15,2	20,4	33,0	12,0	100

Source: Our elaboration on FADN data 2013

In terms of multifunctional activities 34.6% of farms have an agritourism, while the remaining 65.4% have other related activities and, among them, 44.3% performs contract services and 38% is dedicated to the production of renewable energies. The economic results of multifunctional farms have been then compared with those of conventional farms and are summarized in the following figures.

In terms of total revenue, the analysis shows that in all multifunctional representative farms the values of this index are higher than that of conventional farms. Exceptions are the livestock farm in the South and the mixed farm in the North-West. This situation changes when comparing the net income of the two types of farms. In fact, four multifunctional farms register lower results compared to conventional farms. Among these remain always the cattle and the mixed farm in the South, while the mixed farm in the North-

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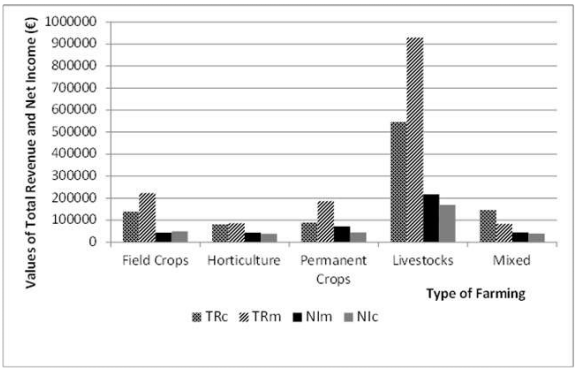
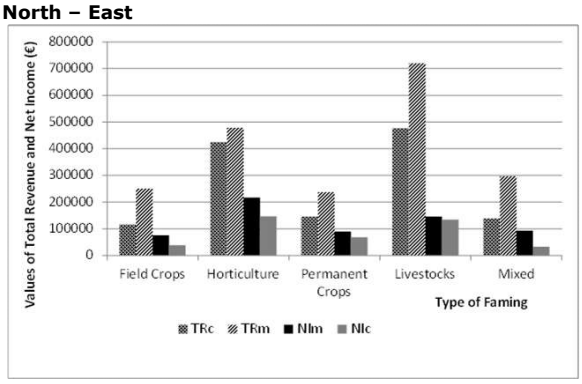
West, which registered a negative value for the previous indicator, in this case showed a better result.

North - West



North – East



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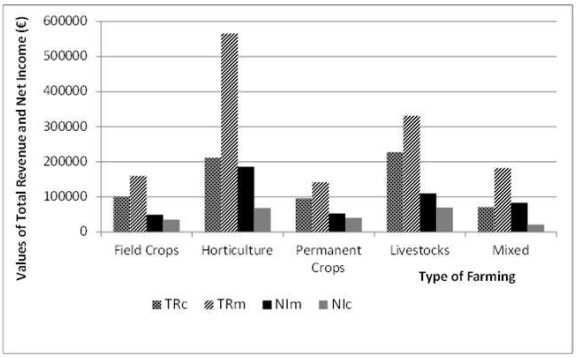
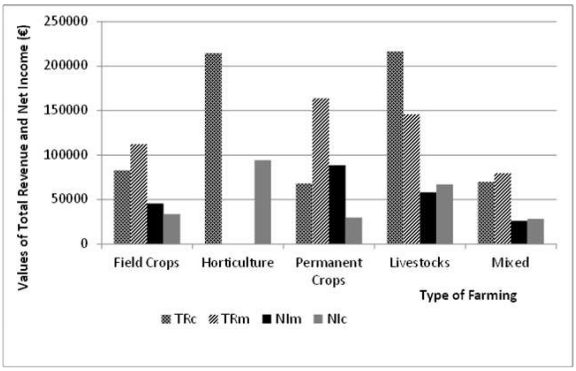


South



Islands

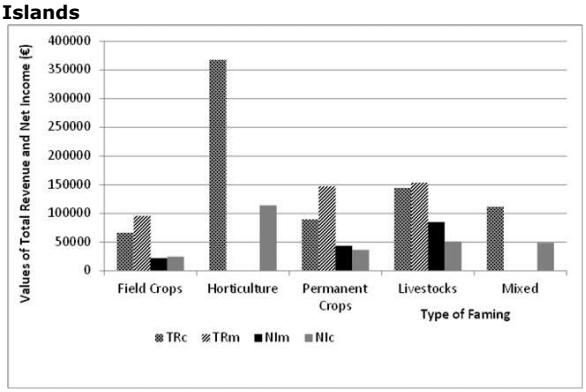


Figure 1. Comparison between performance of multifunc-tional and conventional farms
Source: Our elaboration on FADN data 2013

They represent, for each Macro-region, the values in euro of Total Revenue (TR) and the Net Income (NI) for conventional (c) and multifunctional (m) farms and for each type of farming.

CONCLUSIONS

The analysis showed that the contribution of the multifunctional agriculture to the income of the family farmer has different effects depending on the characteristics of farms, their geographical location and their specialization. In particular, we found that the farms with extensive activities are more oriented to multifunctionality. The study reveals how multifunctional farms tend to specialize in the production of renewable energy and in providing services (subcontracting). Therefore, the effect of the multifunctionality on the family income seems to be positive, although there are some cases in which the economic performance of multifunctional farms are lower than those of conventional farms. But in these cases the multifunctional character has helped to mitigate the differences between the two groups of farms.

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Study of Farmers Adaptation to Urbanization and Their Capability to Develop Multifunctional Peri-urban Agriculture

Didit Okta Pribadi[1]

***Abstract* – Expanding Asian megacities has created a specific feature called "Desakota" as a mixed urban-rural zone in the peri-urban area. In order to support urban sustainability, conserving farmland in the peri-urban has been proposed to provide jobs, food, and ecosystem services simultaneously. However, transforming rural farming into multifunctional agriculture still becomes a critical issue. This research aims to study farmers adaptation to urbanization and analyze their capability to develop multifunctional agriculture. It was based on interviews with 101 farmers in the upstream area of Ciliwung as the most important watershed in Jabodetabek Metropolitan Area (JMA). Three agricultural types were found consisting horticulture, paddy field, and a few food crops. Horticulture, which has capital intensive can provide jobs, income, and food product for regional markets, but unfortunately harm the environment. Whereas paddy field is still persisted as a subsistence agriculture. The farmers have an access to land mostly by sharing the harvest, working as a property guard, and rent the land. Choices about commodities and the form of farmland access affect the farming practices. Therefore, multifunctionality of farmland is likely related to farmers individual capacity, different motives and strategies of the farmers, and the relationship between the farmers and landowner.**

***Keywords* – peri-urban agriculture, farming adaptation, multifunctional agriculture.**

INTRODUCTION

Urbanization in Asia is characterized by rapid agglomeration of social economic activities in only a few megacities. Expanding urban settlements often penetrated important agricultural land in the peri-urban zone and created a specific feature called "Desakota", where urban and rural systems are intermingled to form a seemingly chaotic urban-rural land use (McGee, 1991). Nowadays, Asia's urban population expands by over 45 million a year and this causes the conversion of agricultural land of more than 10 km2 a day (Dahiya, 2012).

This situation has increased issues of poverty, food insecurity, and environmental degradation in the urban area. Therefore, the role of farmland in the peri-urban has been emphasized in order to deal with these issues. Development of peri-urban agriculture could become a key to support the role of desakota regions in providing jobs, food, and various ecosystem services (Pribadi and Pauleit, 2015).

Consequently, the development of multifunc-tional agriculture is required. As different functions of farmland in urban area have been frequently discussed, little work has been done to analyze the transformation process of rural-traditional agriculture into multifunctional agriculture. As a result, agriculture activities often fail to adapt to urban environment, thus preserving farmland in peri-urban zone is still hard to be done.

This research aims to study farmers adaptation to urbanization and analyze their capability to develop multifunctional agriculture. The multifunctionality refers to the role of agriculture in providing income, jobs, food, and ecosystem services, and it is important to preserve farmland in the urban area.

METHODOLOGY

This research was done by interviewing 101 farmers who are distributed in the upper, middle, and the lower part of the Ciliwung upstream area. This area is located in the peri-urban zone of Jabodetabek Metropolitan Area (JMA) with Indonesia's capital Jakarta at its core. This area plays an important role in water management, has beautiful landscape scenery for recreational activities, and contributes to agricultural products. Once, this area was strongly pressured by urban expansion, but recently urban development has been limited by the government. The questionnaire was designed to identify the char-acteristic of farmers and their farming activities, and to define the capacity of their farming activities to provide jobs and income, to supply food product, and to improve environmental quality. The statistical descriptive approach was used to analyze the data, and the Correspondence Analysis (CA) was applied to assess the correlation between variables.

RESULTS

Most of the farmers have a low educational level: 10% of the respondent (11)* do not have education and 76% of the respondent (77) have an elementary school education. Seventy two percent of them (73) work as a full time farmers. Fifty three percent of farmers (54) cultivate horticulture, 42% (43) cultivate paddy, and only 4% (4) cultivate food crops (corn and sweet potato). Farmers age range from 24 to 84 where 80% of farmers are between 35 to 65 years old. Most of the farmers do not work on their own land, thus they have an access to land by sharing the harvest (34), rent (26), working as a property guard (22), giving money as a guarantee to use the land (3), or illegally opening the land near the forest (3).

Most of farming activities can generate valuable income, especially horticulture with the average BC (Benefit-Cost) ratio of 3.5; while paddy fields have the lowest average BC ratio of 1.14 but it is still able to

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* Number in the brackets shows number of farmers

cover the total cost which is much lower than horticulture. However, some paddy fields have BC ratio lower than 1, but it is covered by income from non-agricultural jobs. Most of horticulture farmers are a full time farmer, whereas most of paddy field farmers are a part time farmer.

Horticulture offers more jobs than other agricultural types because it needs very intensive treatment. On average it needs 5 workers a day per hectare for 3-4 months of one planting season. Whereas paddy field only needs 2 workers a day per hectare for 3-4 months of one planting season since the farmers only need labor for planting and harvesting.

Despite the ability to generate income and provide jobs, farming activities may provide adverse impact on the environment. Horticulture uses a lot of chemical fertilizers, pesticides, and herbicides to increase the harvest. Furthermore, the organic agricultural approach is not so popular as well as the implementation of soil and water conservation principles. Particularly for horticulture, some farming practices even harm the environment as some farmers exploit the land to maximize their benefit. Still, most of farmlands have beautiful landscape scenery that attracts many visitors from the city to come. Some visitors visit the farmland just for relaxing, some others want to be involved in farming activities, and the others want to buy agricultural products directly from the field. Unfortunately, the farmers cannot manage these potential activities due to their lack of capacity to develop agro-tourism activities and their limited right to manage the land.

The role of farmland in supporting food security also cannot be neglected. Most of horticultural products are sold in the regional market in JMA. Food crops such as corn and sweet potato are mostly sold in the local market, but they are commonly bought by visitors or tourists who come to this area. Whereas the rice is usually consumed by a family of the farmers, including the landowner who get the sharing harvest.

Apparently, in this area, farmland has played multiple functions, but there are some factors that hamper the development of fully multifunctional agriculture. While horticulture business attracts young, skillful, and full time farmers, further analysis shows that the profit-seeking motive coupled with insecure property right of farmland have stimulated exploitative farming practices that harmed the environment. On the other hand, paddy field, which is developed on the small patches of land with more secure property right, produces very low benefit, thus it is mostly run by the poor, old, and part time farmers who are difficult to adapt to urban situation as well as develop multifunctionality.

DISCUSSION AND CONCLUSION

Based on the results it can be defined that farmland in the peri-urban is not merely rural and traditional farming which is run by the old farmers. To some extent, the interaction between rural farming and urban environment has attracted young, skillful, and full time farmers to make a high investment in agriculture, employ many peoples, generate more benefit, and supply the regional market.

However, limited access to land has resulted in dealings between the farmers and landowners through different ways. Relationship between farmers and landowner which is more personal and long-term (ex. working as a land property guard), has made the farmers concerned about the sustainability of the land. Whereas the relationship between farmers and landowner based on a short-term contract (ex. renting a land), has pushed the farmers to exploit the land in order to return their cost of investment as well as pursuing a maximum benefit.

The interaction between urban people and farmland also shows a positive trend. Many urban people enjoy the scenery of the agricultural landscape, want to be involved in the farming activities, and buy the harvest directly from the land. It is contrary to the common perception that agriculture is rather rejected by the urban society as something "old", "outdated", "non-modern", especially the middle and upper class. Unfortunately, the farmers have lack of capacity to manage and take an advantages from this trend.

It can be concluded that the interaction between urban and rural life can stimulate the transformation process of rural agriculture into multifunctional agriculture. However, this transformation will not be complete if some factors that could hamper the process are neglected. There are 3 factors that should be noticed consisting in: farmers individual capacity (skills and capital), different motives and strategies of farmers (the adaptability of farmers to urban situation), and the relationship between farmers and landowner (access to agricultural land).

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Agriculture multifunctionality: rhetoric or tool analysis of rural development?

Edgard Malagodi, Arilde Franco Alves[1]

***Abstract* – In the sense of contribute to the W3 - Economic impact at the farm level - the Second International Conference on Agriculture in an Urbanization Society, presents the conceptual framework of agricultural multifunctionality, based in the understanding of what the same, in addition to producing food and fiber, performs many other functions of essential importance in the dynamics of rural development. This understanding extends the field of socio-economic functions attributed to agriculture, no longer understood only as a producer of agricultural goods. Therefore, based on the premise that the productive dynamics and socio-cultural result of social relations themselves of agriculture, marked by numerous representations related to territorial characteristics, was used as an analytical tool the notion of multifunctionality, to demonstrate the sociological importance of the multiple functions of peasant family agriculture in the context of the Brazilian semi-arid re-gion. Methodologically the research was focused on the farming families in Curimataú Ocidental and its territories, based on secondary information and interviews with "social actors" local places, rather to point out that this diversity of agricultural activities is 'producer' externalities positive environmental sustainability. These results confirm previous research that agriculture loses the exclusivity of its production and economic, played an increasingly the character of a living space, 'producer' of externalities and public goods.**

***Keywords*: - multifunctionality; regional development; peasant agriculture; socioeconomic externalities.**

INTRODUCTION

The discussion around the notion of multifunctionality of agriculture (MFA), from the European debates that knocked at the doors of the Brazilian Academy, putting on the agenda a significant reflection and a permanent question: is not this more an academic rhetoric, given the social and environmental deficits of conventional farming, at least in the terms in which it was initially placed? Or it is an efficient proposal, particularly to areas that face serious economic barriers, to advance the discussion on rural development (RD)? This article[2] points out the possibilities that the focus of the MFA can offer to regions with climatic and environmental limits to the development of agriculture and livestock, and seeks through the multifunctional approach, to develop a perception for local and regional importance of traditional agricultural practices in a semi-arid area in case the Curimataú Ocidental, State of Paraíba, Northeastern, Brazil.

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2 The Thesis Snipping "The multiple functions of peasant family agriculture: socio-cultural and environmental practices of coexistence 'coping' with the semi-arid" (ALVES, 2009).

CONCEPT AND UNFOLDING OF MFA

The concept of MFA appears in the 1990s, based on three concerns: a) the link between agriculture and the environment in a sustainable perspective; b) the relations between agriculture and food safety; c) the relations between agricultural and international trade. This notion is now recognized in the text of Agenda 21, 1992, entitled "Promotion of Sustainable Agricultural and Rural Development".

In Europe, the term "multifunctionality" was inserted in 1993 by the European Committee for Rural Law concerned with harmonizing agricultural legislation of countries, giving a legal content to the vague notion of sustainable agriculture (Tonneau, 2002). It is noted then that the MFA may be comprehended as a theory and social policy tool with the function of "producing" non-marketable public goods.

To Vollet (2002), in the economic field there are two distinct analytical angles of understanding the MFA; the first relates with the concept of "externalities" which agriculture is, by nature, multifunctional; the second relates to the concept of "function", which agriculture is related to through multiple objectives, which may meet before society. In this conceptual discernment, the externalities may also be characterized as being positive or negative: positive when related to the benefits (technical results in production and services produced in their extension); negative when related to some damage resulting from the productive activities, as for example: soil degradation, destruction of landscape, etc.

Generally speaking, first impressions seen this alternative notion to be considered and adaptable to the Brazilian agrarian reality. However, Maluf (2003) noted that it could not transfer the theme of MFA to Brazil in the same terms adopted in Europe; it should be observed, preliminarily, the great heterogeneity and social inequality of Brazilian countryside. It was important to distinguish in the Curimataú Ocidental, locus of research, distinct logics of social reproduction of agriculture. Some are focused on developing capital intensive agriculture, i.e. an industrial agriculture; while others present mostly a picture of agricultural systems with elements of a peasant's economy, also focused on the reproduction of other values that go beyond the economic sphere; and it is that question that interests us here.

THE RELATION OF 'MODERN' AGRICULTURE WITH THE MFA

Among the assumptions around the MFA, the point that sparked more questions was perhaps the crisis experienced by farmers who joined the industrial agriculture, coupled with all its interfaces that affect their rural way of life. In this aspect, for Abramovay (2002) the agricultural management in Europe, who was exclusive theme of farmers and the state, begins to mobilize various actors, who questioned the form of

subsidizing agriculture with the focus directed to productivity.

The modernization process has resulted in a diverse range of producers in Brazil, because the participation in the market was demanding larger scale of investment, compromising the positive returns of the agricultural income. This kind of demand has put large number of farmers in a situation instability and risk. However, most farmers of the semiarid areas passed to have, then, only a local and residual insertion, restricting their commercialized production, which in this region has coincided with the major regional crisis of the cotton crop. Subsistence farming and livestock they became the alternative of most medium and small producers.

In the Curimataú Ocidental we found a set of agricultural productive activities (maize, beans and cassava) and livestock (cattle, goats, poultry), duly inserted in the context of practices - knowledge and practices - developed by the peasants, coexistence with the semi-aridness climate, that historically comprise the history of formation of the Northeast, as important alternatives for autonomy and sustainability.

According Malagodi (1999) that is therefore the role played by peasant agriculture, whose production is simultaneously directed to the production of self-consumption as well as a small participation in local markets (products that in market realize the work crystallized in the peasants themselves and, to be goods, make possible the monetization the result of the workforce). In this sense, this MFA discussion needs to be contextualized, historically, so that they might know how to put this fact in the economic theory.

TO CONCLUDE: THE OTHER IMPORTANT FUNCTIONS OF AGRICULTURE IN CURIMATAÚ.

First, we identify farming activities focused on food safety. It is therefore an economic function with social outcomes: food security and sovereignty, made possible by access to land, with benefits for the family and for the community. Second, we observe the development and preservation of a rural culture – music and dance folklore and local culinary, mostly. Such elements have been re¬covered for regional tourism, which have favored, however, medium-sized cities (like Campina Grande, for example, regional metropolis), much more than the small towns and villages where this culture flourished and developed. Third, development and preservation of local innovation technology adapted to the region: native seeds, varieties of plants, livestock and poultry adapted, tools and techniques of uptake and of rain water reservoirs (stone tanks, underground reservoirs). The conservation and development of a well-adapted agriculture is a result as well as a precondition for local development, because the general climatic and environmental requirements do not allow cultures of the wet, hot or temperate. In that sense, fourthly, we can list an element that marks the MFA in the semi-arid region: the coexistence with the semi-arid climate, ensuring the establishment of rural populations in these seemingly inhospitable regions.
However, all these elements need public politics (some more than others) to strengthen local mechanisms to preserve the technical and the local culture.
In the field work, it was found that there is no social movements or a base social organization (done by agro-environmental NGOs and trade union organizations, based in this region), is little perception and the construction of these values, linked to environmental sustainability and coexistence with semi-arid climate, given that the economic conditions (as heavy labor, rural poverty, migration of sons) end undermining the potential development of a semi-arid region.

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WG4 - New business models for multiple value creation

In recent years, numerous initiatives, businesses and movements have been arised working on multiple sustainability goals and explicitly creating social value for society. Increasingly social entrepreneurs emerge in the void that is created by the withdrawal of governmental institutions on for example social care or management of parks and nature. This trend is endorsed by the European Social Business Initiative, that has been initiated by Barnier. In new ways small companies and communities organize concerted activities and generate values. These structures can be described as a new trend in business ecosystems, a familiar concept in business studies. Within business ecosystems not only the economic value is of significance, but also values such as living environment, social cohesion, spirituality, authenticity and commitment. Traditional economic models for business development give insufficient information for support and improvement of these new initiatives, because they focus primarily on the individual performance of a business, that may take place in different networks. In this new trend however, networks have become sharing communities that include both enterprises and active community members. This puts a lot of theoretical and practical constraints on using business models, by advisors, policy makers and researchers who want to advise these new practices, sometimes creating misunderstanding rather than a good action perspective.
Goals of this working group is to present, discuss and reflect on a new generation of business models that address multiple forms of value creation in this new generation of business ecosystems. Invited papers should elaborated on some of the following elements:

- *Problematisations of business models in the light of business ecosystem developments, e.g. highlighting social capital and local exchange trading systems*
- *What business models are better suited to address societal challenges?*
- *How to articulate and valorise social values?*
- *Presentation of best practices and grass root initiatives of multifunctional farms, urban farms and social enterprises combing profit and social impact.*
- *Incentives, interactions and consequences for the logic of family farms in relation to the emerging new business models.*
- *Theoretical foundation and understanding mechanisms of above mentioned initiatives, factors for success and failures.*
- *Ideas for integration of multiple values and value exchange in new business models.*
- *Approaches for co-creation and co-design of new products, services and exchanges addressing societal challenges.*
- *Critical points and opportunities for scaling of the new business model.*
- *What governance arrangements will stimulate the arise and scaling of new business models?*

Convenors:
Ir. Herman Schoorlemmer, PPO, Wageningen UR, The Netherlands
Dr. Roel During, Alterra, Wageningen UR, The Netherlands

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Conceptualising an adaptive cycle methodology for entrepreneurial ecosystems: rural reinvention in the Tamar Valley

Robert Newbery, Simon Platten, Rachel Kaleta[1]

***Abstract* – Isenberg's Entrepreneurial Ecosystem concept sets out a number of institutional factors necessary for entrepreneurs to thrive. Set within a positivistic philosophy, and based on a neo-classical 'developed' model of the best economic environment, this represents a snapshot, ideal-type output of the project of modernism. Bringing criticisms of general stage models to the concept, this paper challenges its current utility. This representation of an entrepreneurial ecosystem is static, linear and uni-dimensional. Within social ecological system theory the adaptive cycle concept provides a potential approach to liberate the entrepreneurial ecosystem concept from an end-point in a project of development to a fluid and dynamic process of enactment. Taking key principles of the adaptive cycle we theorise an entrepreneurial eco-system as a dynamic entity with a definite lifecycle. The concept is illustrated using the historic example of a honey cooperative operating in the Tamar valley, England. Here a previous entrepreneurial ecosystem has been born, thrived and died. The bones of the old have been used to reconstitute an adapted ecosystem. This contributes to the conference by exploring the complexity of rural entrepreneurship in an urbanising world – where an entrepreneurial ecosystem is less a developmental aim and more of a continuous reinvention.**

***Keywords* - entrepreneurial ecosystem; adaptive cycle; rural; grower's cooperative.**

INTRODUCTION

Isenberg proposed an ideal end-state of the institutional factors that constitute a 'successful' entrepreneurial ecosystem. Such an ecosystem is characterised by six domains that include a conducive culture, enabling regulation, availability of finance, good human capital, commercial markets and institutional support (2011). These domains are seen to interact and evolve through a mixture of the free-market and public leadership into self-sustaining and systems of economic development. Although Isenberg acknowledges that every ecosystem is unique, the implication of the framework is that by describing the institutional factors necessary for success, the architects of aspirational entrepreneurial ecosystems should be able to understand which areas need developed.

However, such models have been criticised as irrelevant to the reality experienced by business (Levie and Lichtenstein, 2010). They are part of a grand narrative, where development can be regarded as the process of reaching the climax of modernity (Fukuyama, 1992). In response to criticisms of this model we look to the field of ecology. Historically this also described systems in linear terms, where the systems were assumed to be in homeostasis e.g. self-regulating. Theory has over the years evolved within the discipline with advances in modelling social systems (Ellen, 1982) and a linking of the study of social systems and ecological systems (Berkes, 1999; Frake, 1962).

Set within a context of encouraging system resilience, proponents of the social-ecological system approach suggest that systems are non-linear and may have different viable configurations of resources and activities (Gunderson and Holling, 2002). Whilst entrepreneurial ecosystems are regarded as developing in a linear and evolutionary progression, social-ecological systems are characterised as moving through four recurring phases within an adaptive cycle (*Ibid*). These states can be characterised as renewal, scaleup / growth, conservation and release. *Renewal* is the reorganisation of resources post their release within a previous configuration, *scale-up / growth* is the exploitation of resources, *conservation* is the continued exploitation of resources that are already committed, *release* is the disconnection and freeing up of resources that were previously being used within a system (*Ibid*).

By recognising that development is non-linear and cyclical, the process of development becomes one of ecosystem governance rather than managed evolution. This in turn means a focus on building in flexibility and resilience rather than encouraging a rigid development pattern. Arguing that the field of entrepreneurship needs to parallel progressive debates from within other disciplines, this paper compares the value of an entrepreneurial ecosystem model to an adaptive cycle model in describing a rural cooperative.

METHODOLOGY

With a particular focus within a rural context, a case study location was selected based within a distinct geographic location. The Tamar Valley is located in the South West of England and has seen a number of horticultural industries grow, blossom and wither over time. For the purpose of this paper the Tamar Valley Honey Co-operative was selected and analysed from both an entrepreneurial ecosystems and an adaptive cycle perspective.

CASE STUDY – TAMAR VALLEY HONEY COOP

Tamar Valley Honey Coop is a not-for-profit co-operative initiated in 2011 to support and encourage bee-keeping. Its goals are to provide access to markets, expertise and training, and economies of scale in purchasing for honey and bee-related products in the Tamar Valley. Table 1 and Table 2 below present the coop from an entrepreneurial ecosystem and adaptive cycle framework respectively.

DISCUSSION

Represented by the entrepreneurial ecosystems framework in Table 1, the Tamar valley Honey Co-op presents as a static outcome of the institutional factors influencing it and, at its simplest, a mundane snapshot taken at a point in time. This describes the institutional environment that the case exists within and prescribes the areas for improvement. For instance, the failure of a previous cooperative within this perspective becomes a symptom of cultural bias, and as such the prescription will be to reduce the bias, this cannot contextualise how this is being addressed. From a development perspective, this fails to account for the collapse of a previous cooperative in its explanation of current success.

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Perspective 2 sets out the same system according to an adaptive cycle framework. This illustrate that the entrepreneurial ecosystem is a dynamic part of an ongoing process. Here the failure of a previous cooperative can be seen to underpin the Release phase, effectively resulting in the ending of previous commercial bee-keeping activity. Then during the Scaling-up / Growth phase existing bee-keepers are re-engaged as a result of a growing critical mass of new keepers. From an ecosystem governance perspective, this acknowledges a previous configuration of resources that did not lead to a long phase of scale-up and conservation, but rather to a rapid release of resources.

Table 1. Entrepreneurial Ecosystem

Isenberg's entrepreneurial ecosystem	Tamar Valley Honey Co-operative
Tailored Environment – Architecture by design	The cooperative was set up by a local Community Interest Company in order to encourage a wider sustainable produce cooperative that served the needs of the Tamar Valley community.
Shape to local conditions	
Engaged private sector	Existing bee-keepers were hobbyists selling from their gate. There was no truly commercial sector operating as prices were too low. The cooperative allows producers to engage commercially.
Have reinforcing institutions	Supported by a local Community Interest Company in terms of staff time, with funding from *Lottery Awards for all* to cover modern extraction equipment. Other support from Environmental health officer regarding the honey extraction room. Local farmers market and local institutions supportive.
Flexible cultural biases (against failure / business)	Reticence amongst existing bee-keepers to get involved with the co-op in its early stages as a previous attempt at a National Honey co-operative went bankrupt owing beekeepers money.
Do not over engineer clusters – help them to grow organically	The co-operative grows through commercial income only, which in turn dictates the speed and type of growth.
Reform regulatory frameworks	Environmental health inspection of the extraction facility was straightforward and the local officer very helpful. Supermarkets require barcodes and SALSA accreditation before accepting any produce. These are prohibitively expensive for a small scale operation.

CONCLUSION

This short paper introduces the problems with describing a dynamic system through a static snapshot that is then used as a point of reference for further analysis. A socialecological model combining elements of the dynamic cycle with the institutional focus of the entrepreneurial ecosystem offers the analytic potential of Isenberg's approach with the benefit of a dynamic model which recognises that an ecosystem will inevitably experience a change of state. This acknowledges the interconnectedness of business activities with the wider natural ecosystem. As such this approach has much to offer economic geographic approaches and in particular rural areas which hold a rich history of multifunctional land use.

Table 2. Adaptive Cycle

Adaptive cycle	Tamar Valley Honey Co-operative
Release	The practice of bee keeping was traditional in the fertile Tamar valley. However during the late 20th Century it became more convenient to buy honey from abroad at a lower price. Coupled with new diseases in bee-keeping, the production of honey had become labour-intensive and uncompetitive. A previous attempt to reinvigorate commercial bee-keeping supported by a National Honey co-operative went bankrupt. Bee-keeping in the Tamar valley was abandoned as a commercial activity.
Renewal	With a renewed interest in the local economy and the ecological benefits of bee-keeping, a local Community Interest Company wanted to build a wider produce cooperative. After local interest at an initial meeting in 2011, participants paid for a short bee-keeping training course. This brought together a core group of new bee-keepers and seed-corn funds to purchase production equipment and market the honey at a local farmers market.
Scaling-up / Growth	tive, with approximately 40 jars sold. By the second year this rose to 15 bee-keepers, with over 1 metric ton sold. Existing bee-keepers were recruited and over 45 individuals trained over a period of 2 years. Production exceeded the capacity of the local farmers market and new wholesale connections were made including an online farmers market, a shop and through other local organisations. Supermarkets are problematic as they require barcodes and SALSA accreditation which are prohibitively expensive for a small scale operation.
Conservation	Having increased the number of trained bee-keepers and members, the cooperative struggled to sell its increasing stocks of honey as to breakeven it must be sold for around twice the price of an average pot of supermarket honey. The National Trust has agreed to sell the honey through their South West retail network which helped balance supply and demand. They are also exploring other hive and honey related products to diversify their outputs. Advanced bee-keeping courses are being run to promote best-practice hive management and they are promoting the use of local bee stock over imported to minimize the introduction of disease.

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Urban farms adaptation to citizens – The case of Alella wine region within Barcelona Metropolitan Region

Xavier Recasens, Oscar Alfranca, Luis Maldonado[1]

***Abstract* – Urban agriculture plays an important role to keep urban fringe areas. Agriculture does not only produce agricultural goods but also non-market agricultural goods. Thus, it is important to preserve agricultural activities and to keep farmers in these urban fringe areas. Cities can be an opportunity for farmers offering products and services that citizens demand and no longer be understood only as a threat to agricultural activities. The object of this work is to analyse whether the wineries of the Protected Designation of Origin Alella, within Barcelona Metropolitan Region (Catalonia, Spain), have adapted their business model to the proximity of cities/citizens and to know what ecosystem services are involved in the offer. The semistructured survey form used for the study has been agreed by the European project COST Action TD 1106 Urban Agriculture Europe.**

***Keywords* – Urban Agriculture, Farm Diversification, Wineries.**

INTRODUCTION

The aim of this paper is to analyse whether wineries of a new urban but old wine region have diversified their activities adapting their business model to the proximity of citizens along with knowing what kind of ecosystem services are offered to citizens. We have selected the wine agrifood industry because wineries include all three key stages of agricultural entrepreneurship: production, agro-industry processing and sales and marketing.

Agriculture plays an important role in the maintenance of non–urbanized areas nearby cities. Farming importance lies in its production activity and also involving soil conservation, maintenance of hydrological systems and agro-forestry mosaics, habitats conservation, the creation and maintenance of landscape, the prevention of wildfires and the maintenance of cultural heritage. Agricultural activities and the maintenance of farms in urban fringe areas must therefore be preserved and promoted. The proximity to the city should not be an obstacle to carry out agricultural activities but an incentive for farmers to adapt products and services to the needs that society demands.

Open areas near cities could become essential for sustainable development of urban areas. They still keep natural and landscape values, agricultural production and are accessible by the citizens. City dwellers perceive these areas as natural spaces closely related to cities environment (Casado-Arzuaga et al., 2013). Agriculture plays an important role in cities' sustainability in this context (Yokohari and Bolthouse, 2011). Farming closeness to cities has benefits such as a higher population interested in off-farm services (Ploeg et al., 2009). This valuation is reflected in a greater demand by citizens of those other goods and services offered by farms (Zasada, 2011). And therefore an opportunity for urban farms to internalize in their business model, the services offered by the agriculture but for which did not receive any financial compensation.

MATERIAL AND METHODS

PDO Alella is within Barcelona Metropolitan Region (Catalonia, Spain). The study area has 644,891 inhabitants (Diputació de Barcelona, 2013) and occupies 307.6 km^2. Even being a wine region, vineyards surface are nowadays just 313.4 ha. The climate is Mediterranean (average annual temperature: 15 °C and annual rainfall 580-660 l/m^2).

Figure 1. Winery – Alella (Catalonia, Spain)

To know the wineries of the study area, we have conducted semi-structured surveys to different cellars included in the Protected Designation of Origen Alella (PDO Alella). Nine wineries received us and answered our interview. The survey form has been elaborated during the working meetings of the European project COST Action TD 1106 Urban Agriculture Europe by the group of models of entrepreneurship in urban agriculture. The survey has 49 questions and is divided in ten parts:1) Farm's description; 2) Purposes of your activity; 3) Farm's situation; 4) Markets and marketing; 5) Institutional environment; 6) Success factors; 7) Problems; 8) Economical and social benefits; 9) Natural and cultural heritage and 10) Owner'sprofile.

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RESULTS

Most of Alella cellars are young enterprises owned by new farmers with a high education level not necessarily related to agriculture.

All the interviewed wineries try to satisfy the demand offering a wide range of products: local wines, organic and biodynamic wines, single varietal wines, and natural wines. Cellars offer an average of more than nine products for this reason. All they sell their production directly to customers in the same winery. There are also two cellars who regularly participate in farmer markets. Many of them distribute their production directly to wines and spirits shops, in local supermarkets and restaurants at local and regional level. The main consumption of their products (60%) is at local and regional level. The rest is consumed in Spanish and international markets. Six of them are monoculture of vines; only three offer other products such as vegetables, fruits and olive oil.

Alella wineries are not used to employ volunteers: only five of them work with volunteers specifically during the harvest season representing less than 3 volunteers, expressed in equivalent workers per year. The wineries only attend 7.000 students per year. Some wineries do not offer educational activities. All interviewed cellars offer leisure and cultural activities. Two of them carry out more than five activities but less than 23,500 visitors/ year are attracted to the whole study area.

We use as ecosystem services indicators the socioeconomic benefits. Ecosystem services indicators have been divided in: production value and paid jobs as indicators of food provisioning; number of volunteers, number of educational and social visitors, and maintance cost of heritage buildings as cultural services indicators; managed open space land and agro biodiversity as supporting services. This figure (fig.2) shows the value of indicators for each of the wineries and the average of all of them.

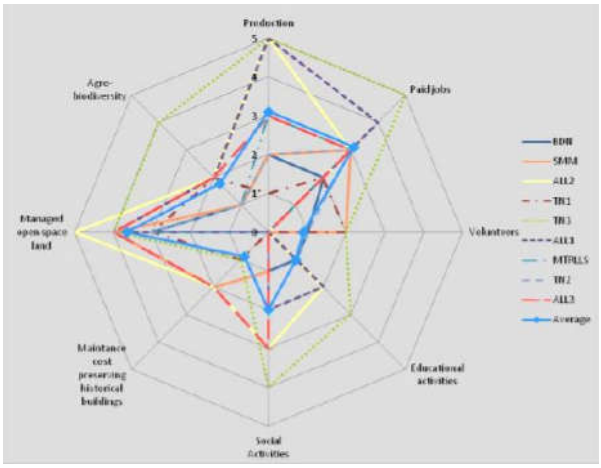

Figure 2. Diagram of ecosystemic services

The ecosystem services of Alella wineries are concentrated in provisioning and supporting services while cultural ones have a lowest ratio.

DISCUSSION

Alella wineries have made an effort to adapt their production, types of wines, to consumers' demand, along with using different short food chains to sell their production. All of them offer different leisure or cultural activities but they have a low number of visitors if we take into account Barcelona's proximity and its tourist potential. Wine tourism in Spain is perhaps in its initial stages, according Marzo-Navarro and Pedraja-Iglesias (2012) or the smallest wineries have not enough manpower to face agricultural labours and taking care of the visitors. The territorial basis of the cellar, as well as the size of the holder are also factors to assess the ecosystem services they provide. Andersen et al. (2013) show that farms' multifunctionality is based on the size of the farm and the status of the farm's owner.

CONCLUSION

The alignment of population and urban growth with young cellars and new farmers in such an old and small wine area is striking. In conclusion all wineries have adapted their production to the demand of society and all them sell through short food chains, so they have adapted its business model to local citizens. All the cellars offer off-farm activities related to ecosystem services but uneven achievements when considering the number of visits they receive. Wineries offer a low ratio of ecosystem services using the selected model of survey: only two of them are over the mean values of the ratios considered. The influence of the small size of the wineries and other spatial or territorial items cannot be assessed by the survey. The association of wineries in the area could improve consumers knowledge about the whole output of small size wineries. Consequently, joint performance of small wineries could promote new activities.

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Rural development and new business models: Production Chain Integrated Plans Calabria Region cases

Castellotti T., Gaudio G., Parlato C.[1]

***Abstract* - This paper analyze two so-called "small scale" productions (wine and figs) that have experience of the integrated supply chain design ("PCIP" Production Chain Integrated Plans) with the aim to apply Leader approach in also at sector level. This paper also aims to be a means for reflection on the strengths and weaknesses of this model and its possible future developments and applications.**
***Keywords* - integrated bottom-up development model, best practices, governances**

Marking a decisive break with the past, in recent years in Calabria some so-called "small scale" productions have experienced a signifi-cant improvement in their production results in wine and fig sectors of the province of Co-senza, and in the organization of the entire supply chain. The aim of the paper is to ex-plain the reasons behind this positive perfor-mance. Introduced for the first time in Italy in the programming of the Rural Development Program (RDP) 2000-2006 of Calabria Re-gion, there are two productions that have ex-perience of the integrated supply chain design ("PCIP" Production Chain Integrated Plans) with the aim to apply Leader approach in also at sector level (Castellotti T., 2012, Gaudio G., Zumpano C, 2007). The use of PCIP has been proposed for subsequent programmes in other regions but with different characteristics that in part betray the original model. There-fore, this paper also aims to be a means for reflection on the strengths and weaknesses of this model and its possible future develop-ments and applications.

The survey method was chosen qualitative semi-structured interviews with managers of the PCIP (wine and figs) and to some of the farms involved.

The objective of PIF Wine was to make the provincial production system capable of pro-ducing quality and lay the foundation for the construction of a food and wine roads, with repercussions on the spatial development of the area. During these ten years the PCIP Wine allowed to work on three different as-pects: the creation of wineries, the quality of the indigenous variety "Magliocco" and train-ing for the reception in farm. The activities of the PCIP Wine has affected asurface area of 357 hectares managed by 63 farms.

The investments on the production side have been linked to those on the transformation by creat-ing wineries in each farm. The realization ofthese wineriesis one thestrengths of thePCIP. So, in the area today there are a large number of farmers culturally aware and motivated to produce quality wine and well organized to company visits (Convertini, Gagliardi, 2013); This activity is the result of joint work between the Chamber of Com-merce, the Consortium Calabria Citra and the passion of an agricultural adviser of the AR-SAC (Regional Agency of Agricultural Development) who strongly supported the acti-vation of the PCIP Wine to plan and manage the development of the territory and the farms that produce wines quality. What remains to be realized - watching both the results and the current needs and the needs already implicit in PCIP is the construction of the first wine and food road able to organize the supply of the tourism product in the province of Cosenza. This wine and food road involves the creation of a "regional network" that involves public and private actors (both belonging to the chain of wine and typical products both to the tourist sector) which, however, requires a slow process and articulated (G. Berti, Ara A., G. Brunori, 2011) because the connections between the actors are all to be built.

Even in the case of the fig tree, an important role was played by the ARSAC advisers from which started the initiative.The Local Action Group (LAG) "Valle Crati" has made availa-ble its expertise in the networking of institu-tions and economic operators, integrating resources and programming tools.

Therefore, the financial resources activated by the LAGare just part of what it is able to mobilize around the initiative. The result was the revitalization of the chain of fig of Cosenza threatened with extinction but that strongly characterizes the identityof the territory. In quantitative terms, the project has produced the following results: the creation of a consortium of more than 100 economic operators (farmers and processors), definition of a product specification, obtain-ing the DOP, product promotion on domestic and foreign markets, the adjustment market through the definition of the market price of the dried product,

The results show the strengths of the instrument PCIP: territorial approach, bottom up, partnership representative of the economic and social realities of the territory, integration of investments, creation of networks of eco-nomic operators. The new program for Rural Development 2014-2020 puts much emphasis on the approach to supply chain without giv-ing adequate attention to the governance ne-cessary for this tool to be successful.

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Bridging the gap – education and farming in specialised kindergarten farms

Chiara Paffarini, Biancamaria Torquati, Roberta Illuminati, BerndPölling,Wolf Lorleberg[1]

***Abstract* – The paper presents a study regarding a new social farming initiative - kindergarten farms or nursery-school farms - which are educational childcare facilities in a farm setting.The aim of the paper is to emphasize the value of potential synergies between agricultureand the educational serviceby integrating daily childcare with farming.We analysed two case studies: one Italian kindergarten farm and one German example.The data collected were utilised to investigate entrepreneurial models through the use of Business ModelCanvas(BMC).**

***Keywords* – Kindergarten farm, Business Model Canvas, farm business diversification.**

INTRODUCTION

Kindergarten farms are rapidly spreading in North Europe.In Italy, specifically in some regions like Veneto, Piemonte, Trentino, Friuli and Marche region, there are already existing over one hundred initiatives, even if the statistic about it are unknown (Torquati et al., 2014).

Besides their important care function, kindergarten farms provide important educational services, in as much as they can shape future generations' food habit, food consumption, and approach to farming and to environmental aspects. Children learn to appreciate and respect nature and agriculture; they learn about the healthy diet, the origin of the food and understand the link between agricultural products and food, re-evaluating the social function of the farmers. This is a crucial aspect of care farming which in this way is able to educate future consumers for sustainable production and consumption, indispensable to build sustainable food systems (FAO, 2014). These activities are also interesting regarding new agricultural business models that can provide an alternative way to achieve economic diversification, to supplement incomes, and to promote female entrepreneurship (Bertolinoet al., 2012).

The study aims to identify the main business strategy focusing on the principlecharacteristics of kindergarten farms, and examines the value of potential synergies between the worlds of agriculture and education bycomparing two case studies.
The "Business Model Canvas" (BMC) is used as suitable template to analyse and compare the two kindergarten farms.

METHODOLOGY

Two kindergarten farms are considered: an Italian case from Marche Region and one from the fringe of Ruhr Metropolis.Data were collected using a questionnaire developed by the WG3 of EU COST-Action "Urban Agriculture Europe" (Alfranca et al.,2013). The collected data were analysed by using BMC to understand how a kindergarten farm "creates, delivers, and captures value" (Osterwalder and Pigneur, 2010). The two case studies were examined through the nine building blocks of BMC considering the four key business areas: customers, offer, infrastructure, and financial viability (Osterwalder and Pigneur, 2010) (Fig. 1).

Figure 1. BMC structure: the nine building boxes and the four main areas of a business

RESULTS

The Italian case study (A) is one of the six kindergarten farms that are part of the project "Quality Kindergarten Network", developed by the Marche Region and the Montessori Method Foundation. The farm is located close to the city, hosted 14 children in 2014 and its main farm activities areproduction and direct sell (Torquati et al., 2014). The German farm (B) hosts about 20 kids and they organize additional daily courses for schools and regular nurseries.

The analysis of the two case studies highlights the main characteristics (or four essential questions, Pölling and Lorleberg, 2014) of a kindergarten farm BMC: costumers ("who?") are families with young children, not familiar with farms and "made fall in love" by means of nursery services, direct sales, local projects and associations; offer ("what?") is composed of educational service and farm products; infrastructure ("how?") is built on educational and productivity functions carried out by external (teachers) and internal (family farming) staff;financial viability ("how much?") is an outcome of revenue streams and costs, not only associated with traditional activities, but also linked with public subsidies (s. Tables 1 & 2).

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Table 1. Comparison between two case studies

Characteristics	Case study A	Case study B
Country	Italy	Germany
Subject	Professional agriculture	(Semi-)professional agriculture
Utilized agricultural area, ha	50	7
Breeding livestock	100	20
Revenue from production	59%	20%
Revenue from social service	25%	75%
Revenue from recreational service	16%	5%
Wage worker	6	2
Family worker	2	1
Volunteer	0	from time to time

Table 2. Comparison between two case studies: BMC

Characteristics	Case study A	Case study B
CustomerSegments	Children, family	Children, parents
CustomerRelationships	Personal/individual	Personal/individual
Channels	Direct sales - localproject	On-farm kindergarten
Value Propositions	FoodProducts - Educational service	Educational services
KeyResources	Location, Family workers	Location, Hiredworkers
KeyActivities	Food Production - Kindergarten	Kindergarten, offers for disadvantaged kids, food production
KeyPartnerships	Marche Region - Product Association	Municipality
RevenueStreams	Sales - Service - Subsidy	Public payments for Kindergarten + from the families
CostStructure	Farm and kindergarten Management	Buildings, playgrounds and pleasant surroundings dedicated to children day-to-day needs; salary

DISCUSSION

The comparison between the two case studies highlights common characteristics, but also shows differences in setting business priorities. The main differences are about the farming activities: in the Italian case farming is the main business activity, while in the German case it is minimal. Indeed, utilized agricultural area and number of wages are higher in the case study A, while case study B carries out many social functions.

CONCLUSION

Diversification into kindergarten farms is of growing recognition and fills the occurred gap between food production and population in general. The recently growing interest of people – often urban dwellers – in food issues and other green topics offers chances for farms to use the changing demands for adjusted farm business strategies, like kindergarten farms.

From the analysis of the data by means the BMC, we can deduce some general business strategy indications: in the Italian case kindergarten is a form of farm diversification, like a new form of social farming, contrary, in the German case kindergarten is the core business of the enterprise. In both of the cases, public decision makers play a vital role, inasmuch as they can formulate legislation to support this new activity, supporting it through public payments. Indeed, in Italy the spread of kindergarten farms hasa greater penetration in the regions where the policy makers have had the ability to adopt a regional law, which regulates the manner of kindergarten accreditation (Rete Rurale Nazionale 2007-2013, 2009) reaching relevant social bene-fit(Torquati et al., 2014).

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Business models in Urban Agriculture - answering cost pressures and societal needs

Bernd Pölling[1], Wolf Lorleberg[1], Francesco Orsini[2], Francesca Magrefi[3], Femke Hoekstra[4], Henk Renting[4], Mattia Accorsi[2]

***Abstract* – Urban Agriculture has to adjust to the urban environments by using the existent opportunities, by dealing with urban disadvantages, and where possible by turning the urban location into market asset. Businesses, which ignore urban demands and conditions, struggle to maintain economically viable, give up or do not develop beyond the start-up phase. The conducted European survey, which follows a standardised questionnaire scheme, aims to detect characteristic business models, success factors and problems. The survey consists of in total 80 case studies revealing a variety of business models, which are all by itself unique, but show also some similarities. The cases are attached to six Urban Agriculture business models: cost reduction, differentiation, diversification, shared economy, experimental and experience. Urban Agriculture is often focusing on one of the six business models, but many cases were found to use elements out of more than one business model. The survey confirms that new business concepts have emerged on established (peri-)urban farms and also on initiatives of UA newcomers.**

***Keywords* – business models, innovation, Urban Agriculture Europe, Urban Green Train.**

INTRODUCTION

Business models of farms located in and around agglomerations have to be different from those located in rural areas to stay economically viable on the long term. Urban Agriculture (UA) has to adjust to the urban environments by using the existent opportunities, like proximity to consumers, by dealing with urban disadvantages, like fragmentation and missing planning capability due to insecure land management, and where possible turn the urban location into a marketing asset, for example by place building. This integration into the urban socioeconomic and ecological system distinguishes UA from its rural counterpart (Mougeot, 1999). Businesses, which ignore urban demands and conditions, struggle to maintain economically viable, give up or do not manage to develop beyond the start-up phase.

"For an urban environment, agricultural production systems that take advantage of the close proximity of resources and consumers, such as those offering fresh, value-added, specialty products would be most appropriate" (Lovell, 2010). Additionally, high-value crop production and marketing apart from regular commodity markets are added by the provision of various services to diversify farm businesses (Gardner, 1994).

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METHODOLOGY

The main aim of this empirical survey is to get a better idea of Urban Agriculture's economic strategies in general and characteristic patterns of UA business models. The survey on UA's business models is based on farm interviews in Europe. The questionnaire follows a standardised scheme to detect business models, success factors and problems.

RESULTS

The survey consists of in total 80 UA case studies from 11 different European countries. The survey includes city-adapted commercial farms as well as private and public gardening initiatives with direct or in-direct economic contributions. The analysed interviews show a variety of business models, which are all by itself unique but nonetheless reveal some similarities. Based on these similarities the case studies were grouped in six business models: cost reduction, differentiation, diversification, shared economy, experimental and experience.

Cost reduction perhaps represents the business model closest to rural farming. However, also farms located in agglomerations' peri-urban fringes use this low cost approach for profitability, and in the urban context specific expressions have emerged. Common are specialisation in high-value crops (horticulture) and methods to reduce costs, like using available and cheap urban surplus resources.

A frequently applied business model in urban areas is differentiation to create distinctions in production, processing and/or marketing. Farms integrate processing and distribution stages for vertical integration of the valued added chain. As differentiation from the bulk market, the often exploited direct sale with premium prices for specific product features (super-fresh, ethnic, tasteful, etc.) is based on personal, transparent and reliable producerconsumer relationships.

Enterprise diversification is another characteristic UA business model, which is strongly contrasting the cost reduction model. Diversified UA enterprises in parallel effectuate activities in some or even many business fields, including also services close to agricultural production, like agro-tourism, care farming, training or landscaping measures. Within the diversification business model the survey results reveal two perspectives: Firstly, rather many urban farms diversify their business into new – often serviceoriented – fields and secondly, non-agricultural enterprises which step into farming as newcomers, e. g. social care institutions, which use agriculture to diversify their businesses.

Experimental UA is based on initiatives that explicitly integrate technological innovation processes that are suited to respond to urban contextual settings. Innovation may be in production (e. g.

aquaponic systems or artificial lighting for indoor cultivation), but also in the processing (e. g. recycle of the urban waste products), or in the functions (e.g. revitalisation of urban brownfields). An important characteristic is also that technologies often are still in development and the applied 'vanguard' technology can even be part of the marketing.

As an expression of the new economy, since a few years initiatives based on 'shared economy' increasingly gain importance. Required resources to run UA in the form of a shared economy model, e. g. CSA, are jointly mobilised and managed, including land, labour, credit, tools, machinery, network contacts and knowledge.

Experience represents the sixth business model that was distinguished on the basis of interviews. This model focuses on providing authentic and 'memorable' experiences by selling rather a story (experience) than only a product. Place-making and training or leisure activities (for example gastronomic experiences) are important elements that in this model are combined with food production.

These six UA business models address the special urban conditions by making use of the advantage of nearby costumers, by compensating negative urban influences, and in some cases also by valorising specific urban contexts such as strong social networks and generating social and ecological benefits (van der Schans et al., 2014). Although UA is often focusing on a specific business model, many cases were found using elements out of more than one.

DISCUSSION

While economies of scale is still an important 'rural' business model in farming to stay competitive under intense cost pressures in the food sector, UA business models have to distinguish by adjusting to specific urban contexts and move away from mainstream commodity market and global prices mechanisms. The conducted European survey confirms that new business concepts have emerged on established (peri-) urban farms and also by initiatives of newcomers in UA. The specific challenging, but also enabling urban conditions encourage innovations in farming, and result in the appearance of business models that in many respects are different from rural farms. Product differentiation and enterprise diversification are the prevailing business models within this survey, but new forms of and new actors in UA raise experimental, shared economy and experience to newly emerging business models.

Business model classification supports the investigation and learning of UA developments. On the one hand, the survey identifies farms, which adapt to the cities in different ways. The term UA means for them "a fundamental re-orientation from the rural towards the urban environment" (van der Schans, 2010). On the other hand, however, UA initiatives are also increasingly driven by newcomers and interest groups outside farming. For example care institutions, housing companies or start-up businesses; some step in from another profession into farming for business diversification reasons, while others start non-commercially or out of social considerations. Often they bring in new business ideas, competences and networks, and the implications of these and differences from 'rural' business models still are insufficiently understood.

CONCLUSION

The observable growth and differentiation of business models in UA clearly reflects the evolution the sector is experiencing. As many of these experiences develop spontaneously in the most diverse and geographically distant urban environments across Europe, the study of their success factors, bottlenecks and specific training and policy requirements may guide current and future entrepreneurs in their project and organizational choices.

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New entrepreneurial skills in the peri-urban agriculture of Italy

F. Giarè, R. Henke, F. Vanni[1]

***Abstract* – During the last decade peri-urban agriculture has been deeply investigated not only from an economic perspective, but also for its important impact on environmental and social dynamics, with an interesting stream of literature which has focused on the changes that farms undergo in the urbanization process.**
Building on this literature, the paper looks at the multifunctional role of peri-urban agriculture in Italy through a comparative analysis of seven metropolitan areas. The paper shows that in the main Italian urbanized environments there is a significant share of adaptive and reactive farms that, potentially, may supply an increasing number and variety of social and economic services to the urban population. Given that the degree to which peri-urban farms may be considered adaptive or reactive is strongly dependent on farmers' entrepreneurial skills, further research is needed to explore the commercial, social and institutional drivers of farmers' decision making about the process of income diversification in multifunctional activities.
***Keywords* – peri-urban agriculture, farms typologies, Multifunctionality, entrepreneurial skills**

INTRODUCTION

In the last few years peri-urban agriculture has been deeply investigated from an economic perspective, and also for its important impact on environmental and social dynamics, with an interesting stream of literature focusing on the changes that farms undergo in the urbanization process (Heimlich and Barnard, 1997; Pascucci, 2008; Zasada, 2011). According to these works, farms can be simply incorporated in the metropolitan development, or adapt to the changes of the surrounding territory, or, finally, react and assume new function meeting a more or less latent expressed by urban dwellers.

Building on this literature, the paper looks at the multifunctional role of peri-urban agriculture in Italy through a comparative analysis of seven metropolitan areas.

A selection and classification of market-oriented farms in the main Italian metropolitan areas was carried out in order to explore the structural features as well as on the main market and diversification strategies of peri-urban farms, with a particular attention to the farms that have reacted positively to the process of urbanization by deeply modifying their production structure and their territorial relationships. To anchor the theoretical framework into empirical experience, the paper shows the preliminary results of a more in depth and qualitative analysis which was carried out for selected reactive peri-urban farms through semi-structured interviews with farmers.

METHODS

The comparative analysis of seven metropolitan areas was carried out on the basis of three typologies of farms that can be identified in peri-urban contexts (Heimlich and Barnard, 1997; Pascucci, 2008):

- *Traditional farms*: passively included in the metropolitan area, without any significant change in the farmers' behaviour and outcome.
- *Adaptive farms*: reaction to the urbanization process through labour deactivation and diversification (part time farming, pluri-activity, external services);
- *Reactive farms*: farms taking the opportunities provided by the surrounding urban environment, by building new relationships with local and distant markets, by differentiating their production and by diversifying income sources through the delivery of a wide range of services.

The data used in the analysis are the micro-data of the 6° national Census of Agriculture (Istat, 2010), picking all the farms included the urban poles with more than 500.000 inhabitants: Torino, Genova, Milan, Monza-Brianza, Rome, Naples and Palermo.

Through a progressively selective process, the three typologies of farms identified were set up according to the following conditions: presence of other gainful activities (diversification) for reactive farms, presence of part-time or pluri-activity for adaptive farms, while we considered as traditional all the remaining farms that have agricultural-market relationships. In this classification we considered as adaptive farms also non-market oriented holdings with diversification of activities.

The paper compares the strategies of seven reactive farms (one for each metropolitan area), with the objective of highlighting the common "economic-driven" elements and the specific "contest-driven" features of the entrepreneurial behaviours.

RESULTS

Typologies of peri-urban farms in Italy

Moving from the farms previously described, we allocated our sample of over 4,000 peri-urban farms in the three typologies highlighted above. Data are summarized in table 1 and show that almost two third of the farms in these metropolitan areas can be considered "traditional farms" (74%), while 16% are "adaptive farms" and only 10% can be considered "reactive farms". These aggregated data, as showed in the table, hide significant differences amongst the different urban poles, with an higher share of reactive farms in the metropolitan areas of the Northern Italy (in particular Monza-Brianza and Milan).

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Table 1. The distribution of Italian peri-urban farms according the three typologies (%)

	Traditional	Adaptive	Reactive	Total
Torino	*64.3*	*19.6*	*16.1*	*100.0*
Genova	*75.7*	*13.7*	*10.6*	*100.0*
Milan	*60.3*	*19.1*	*20.6*	*100.0*
Monza-Brianza	*42.4*	*27.9*	*29.7*	*100.0*
Rome	*80.4*	*13.4*	*6.2*	*100.0*
Naples	*87.2*	*9.2*	*3.6*	*100.0*
Palermo	*76.1*	*22.3*	*1.6*	*100.0*
Total	*73.8*	*16.1*	*10.1*	*100.0*

Source: calculations on ISTAT (2010), 6th Agricultural Census

In spite of the limited number of reactive farms, their average size (22.7 ha) and the standard output (€ 70,000) are much higher compared to the average values for traditional farms (11.3 ha; € 43,000) and adaptive farms (9.9 ha; € 29,000).

With regards to the main source of revenues, traditional farms depend, as obvious, on the agricultural activities (92%) while public support has a relatively low importance. On the contrary, adaptive farms rely more than the other typologies on public support (17% of total revenues), while for them a significant share of the revenues derives from forms of gainful activities other than farming. In the case of reactive farms the source of revenues from other activities increases significantly (around 40%), while public support accounts only for 3%. Thus, the data show how the public support is currently playing a marginal role for reactive farms, while it seems more relevant for the survival of adaptive farms.

Entrepreneurial skills of peri-urban farmers

A more in depth and qualitative analysis was then carried out for selected reactive farms through semi-structured interviews with farmers. Attention was given to common features driven by the economic rational behaviour but also to specific features driven by the local contest and the peri-urban nature of the farms. The ultimate goal was that of shading light on the extent to which the overall entrepreneurial choices are contributing to enhance the economic, social and environmental sustainability of the agri-food system in different metropolitan contexts.

The preliminary results of this qualitative analysis show that the selected reactive farms of the seven urban areas differ not only in terms of farm structure and specialization, but also in terms of entrepreneurial strategies, reflecting the specific features of the different peri-urban conditions. Indeed, the diversification strategies adopted by the farms under study were developed as result of a complex mix of "economic-driven" elements and of specific "values-driven" features of the entrepreneurial behaviours. A third important aspect consists in "contest-driven" elements that can favour or hinder the action of the farms.

They all reacted to their "peri-urban status" in a way to turn localisation and structural limits into success stories: agri-tourism and direct sale in Naples, educational farming in Genova attached to a high-tech pesto production, non-certificated organic production in Monza and, finally, a social farm in Rome which is diversifying further becoming a multi-faceted business in economic terms. A common feature of all the farms is related to the key role of local networks in enhancing the multifunctional role of peri-urban farms. Within these networks local institutions (i.e. municipalities) seem to play a pivotal role in setting the contest-driven elements (in terms of legislations, infrastructure, land use planning, and incentives) that can stimulate farmers' capacity to renew and re-orient their activities towards multifunctionality.

CONCLUSIONS

The first objective of this paper was to identify three typologies of market-oriented farms (traditional, adaptive and reactive) in the main Italian metropolitan areas. This classification process has been then the basis to select specific cases of reactive farms, where the factors that have influenced their successful multifunctionality trajectories were explored more in depth.

Even though in different metropolitan contexts different drivers were observed, the paper shows that the degree to which peri-urban farms may be considered reactive is strongly dependent on farmers' entrepreneurial skills and on their capacity to renew and re-orient their activities towards multifunctionality. These skills are strongly related to a complex set of commercial, social and institutional drivers of farmers' decision making about the process of income diversification in multifunctional activities that need more attention and will be addressed in future research.

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Urban Agriculture – it is a business! Business models in Urban Agriculture

Jan Willem van der Schans[1], Wolf Lorleberg[2], Bernd Pölling[2]

***Abstract* – Public opinion and decision makers in Europe reduce Urban Agriculture often to community gardening activities. While most urban agriculture protagonists focus on societal and ecological benefits of projects, economic dimensions remain understudied and their role is sometimes even neglected: Well-run urban farms are or can become the "hidden champions" of an urban green development strategy. The joint analysis of several German and Dutch case studiesfound a great range of diversified and successful business models. Identified business strategies were grouped in five types: differentiation, diversification, low cost, "the commons" and "experience". "The commons" stand for new approaches towards share economy, while the "experience" strategy aims on offering authentic personal experiences to clients - rather than selling only products. Successfully applied, these strategies turn enterprises and projects economically competitive towards conditions under which "agribusiness as usual" would not have a future chance. Business models of urban agriculture show also an innovative character or "living laboratory effect" relevant for the farming sectoras a whole. This fact may serve as a strong argument for political support by local, regional and European decision makers.**

***Keywords* – urban agriculture, business models, success factors, social innovation, policy recommendations**

MAPPING BUSINESS MODELS

Business models or entrepreneurial models describe "the rationale of how an organization creates, delivers and captures value" (Osterwalder and Pigneur, 2009)and stand for the "design of organizational structures to enact a commercial opportunity" (George and Bock, 2011).A practical approach for visualizing and characterizing business models, known as the CANVAS business model, was developed by Osterwalder and Pigneur (2009). For mapping business models in urban agriculture as it was realized for this study, the CANVAS model is considered as simple and understandable for international teams, while not oversimplifying entrepreneurial activities (Pölling and Lorleberg, 2013). It specifies which customer segments are served, what value is created, what activities are carried out, and which resources and strategic alliances are needed.

One of the first applications of the CANVAS model to urban agriculture (UA) was realized by the Green Deal on urban agriculture research project (Green Deal Stadslandbouw) in the Netherlands (Nationale Federatie Stadsgerichte Landbouw, 2013).Its report distinguishes three different strategies that urban agriculture initiatives (can) use to survive: *Differentiation*, *Diversification* and *Low cost*. These strategies have been elaborated also in earlier research on multifunctional agriculture (Van der Ploeg et al., 2002), but are also an inspiration for initiatives in UA (Van der Schans and Wiskerke, 2012). In its more recent innovative forms urban agriculture in Europe also draws from other sources, it can sometimes be interpreted as a manifestation of "the new economy"; i.e. the "share economy" or the "experience" economy. Based onthese perspectives the strategies *The commons* and *Experiences* were derived (van der Schans, 2011).

IDENTIFYING FIVE BUSINESS MODELS

The *Differentiation business model* is a strategy to survive in very competitive markets which usually have very low producer prices. Differentiation is suitable for small farms and part-time farms without possibilities to increase their productive area. It is often successfully linked with direct marketing and own processing: freshness, locality, personality can be convincing unique selling propositions even without official certifications and quality assurance programs.

Adding economic activities from outside of agriculture, as promoted in the *Diversification business model* is another answer to increased urban pressure for land. This strategy is often used by middle size peri-urban farms, but it is very demanding for the management of the farm, which needs to create synergy between the various activities. Diversification is also the right strategy for optimal utilization of fixed farm assets for decreasing production costs. A second type of the diversification business model is realized by institutions with key activities in non-farming economic or social sectors, which engage as a diversification strategy into agricultural or horticultural activities. These activities are related with societal benefits, often focusing on inclusion of disabled or socially disfavored persons.

The *Low cost business model* is mostly realized by modern greenhouse enterprises in peri-urban areas, often linked in an agropark (cluster) concept with other forward or backward integrated agribusiness enterprises. This upscaling to reduce costs is in fact an answer to a previously inconvenient land structure, logistical deficits, high energy costs and price pressure by cheap imports challenging traditional small and medium sized urban horticultural enterprises. Production is mostly in-house, capital intensive, focusing on state-of-the-art high technology, economies of scale and resource efficiency: This can be increased by exploring synergies with other industries, for example re-using surplus energy or organic waste from them.

The *commons business model* sets its focus widely on societal benefits and community engagement - and claims to be a model of a new economy, based on sharing goods, resources and knowledge, and representing a new paradigm against the traditional homo economicus approach. The commons initiatives

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are social laboratories, which in fact claim to be more than a new way of food production and distribution: This is about re-introducing food literacy among urban dwellers and ultimately it is about reclaiming food sovereignty for urban dwellers. Combinations with other business models are promising: Examples are social enterprises focused on job creation and work income, Community Supported Agriculture (where people take a share in the harvest or even in the farm as such), rent-a-field-concepts, etc.

The *Experience business model* is based on the insight that more value is added by providing memorable experiences than by providing basic goods or services. It requires high skills in customer relationships and marketing, but it can be founded on relatively small production plots - not the product itself is to be sold, but the experience with the product or with the activity to farm the product. Urban farmers are capable of staging unique experiences precisely because of the ultra-short distance between farm and target audience, especially as one can create a very direct and very exciting interaction in the city between opposing phenomena such as nature and culture, green space and grey buildings, etc.

LESSONS TO LEARN

All business strategies - or combinations - can be favorable, - depending of the starting position from individual, but also from societal points of view. All of them can be supported by adequate policy measures, like proposed by stakeholders and in relation to urban policy goals.

Public support to the *Differentiation* business strategy can be to proactively protect smaller plots of lands in and around cities as productive spaces, rather than allow these to be taken over by urban development. Also the creation of a local or regional premium product platform can be a way to support this strategy. *Diversification* business initiatives ask policy makers for multi-functional zoning designations in physical planning, including the possibility to build non-farming related infrastructure in urban and peri-urban green buffer zones. More interaction between professional associations and urban policy makers is called for in the field of urban agriculture.To open up public funding for urban agriculture projects that provide public services, is another point that requires attention. For realization of *Low cost strategy* based agri-horticultural clusters, a political will to develop this is a precondition. Further there must be support by planning policy and zonal designation and an investment in efficient public infrastructure for transport, logistics, energy and water supply. Promotion of synergies across enterprises for closing circles and for resource efficient production should be recommended. Initiatives pursuing a strategy of *The commons* ask for different kinds of public support, for example access to land and irrigation water, the right to temporary use of public land, including a waiver in construction regulations under defined conditions to build a place to store shared equipment and a space to gather and celebrate community. Referring the *Experiences* model practical support of local authorities can be recommended to protect or even strengthen the unique and authentic qualities of the experiences created (protection of the character of the physical place, accessibility of the location for large crowds on events, etc.). This model is also interesting as small pilot units can develop to start-up enterprises which may later grow to support the urban economy and to provide market innovation to the agricultural sector as a whole.

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The social farmer as a shared value creator: creating new business models with the Impact Driven Business Modelling tool

Nicky Dirkx, Pol Bracke, Tom Van Wassenhove[1]

***Abstract* – In a multidisciplinary team consisting of agricultural and orthopedagogical researchers, as well as experts in entrepreneurship and strategic management, we did 29 in-depth interviews with social farmers in order to create a profile, to determine success factors and to explore innovative business models. The results show seven success factors, including entrepreneurship, innovation and management skills. Social farmers can be considered as social entrepreneurs who often have a well thought-out vision. However, due to a lack of knowledge about economic issues and strategic management, their business model often lacks consistency and stability. Three of the interviewed social farmers participated in a course, coordinated by the multidisciplinary research team. A multidisciplinary team of students was involved as well. In order to create a business model that guarantees the balance between social and economic value creation for each of the three cases, we employed the Impact Driven Business Modelling Tool (Bracke & Van Wassenhove, 2015), specifically designed for social entrepreneurs to integrate both social and economic objectives, impelling them to think about goals, business concept, resources, stakeholders and partners, processes and policies and eventually the social impact they bring about. The social farmers were challenged by the mixed student-researcher team to reflect on every aspect of the IBDM-tool in an innovative way. The final result was a nicely integrated business plan for the three cases.**

***Keywords* – social farming, business modelling, social entrepreneurship, student involvement.**

INTRODUCTION

Within the scope of our research, we aimed to define social farming, which is scientifically underexposed in Belgian academic resources, in a clearer way. Since the increasing success of social farming, its professionalism surely is made necessary. By the output of the research project, we wanted to provide the farmers with professional support and advice in order to realize their plan and to prevent starters to pull out before the start. Social farmers can be regarded as social entrepreneurs providing assistance in an inclusive, dynamic and creative way and offering a possible solution to budgetary problems in the social sector. However, finding a balance between economic and social value creation, is quite a challenge for them. Due to a lack of knowledge about economics and strategic management, their business model is not always well developed. A good understanding of how to create value is indispensable for each entrepreneur. However, the additional complexity of a social enterprise lies in the anchorage of the social orientation in economic activities and strategies. If this anchorage fails, the social policy can become an obstacle to the economic activities. A well-designed business model is a useful tool to avoid this risk.

METHODOLOGY

We did 29 in-depth interviews with social farmers across Flanders, Belgium. Three of them participated in a course, coordinated by a multidisciplinary team, consisting of agricultural and orthopedagogical researchers, as well as experts in entrepreneurship and strategic management. A multidisciplinary team of students was involved as well. The cases were chosen based on the specific questions and needs of the interviewed farmers.

In order to create a business model that guarantees the balance between social and economic value creation for each of the three cases, we employed the **Impact Driven Business Modelling Tool**. This is a method which is specifically designed for social entrepreneurs to integrate both objectives, impelling them to think about goals, business concept, resources, stakeholders and partners, processes and policies and eventually the social impact they bring about.

In mixed teams, students and researchers had brainstorming sessions and reflected on the different items of the IBDM. Results were frequently submitted to the farmers who gave feedback, what could lead to some adjustments.

Students and researchers visited four social farms in the Turin region to become inspired by successful Italian cases. Inspiring aspects gained from this experience were also integrated in the final business models.

RESULTS

The social farmers were challenged by the mixed student-researcher team to reflect on every aspect of the IBDM-tool in an innovative way. They started to involve the neighborhood, cooperate with stakeholders, designed a logo for marketing reasons and devised activities for children. The final result was a nicely integrated business plan.

The researchers could list up difficulties and possibilities of the IBDM. The data from the course were complementary to the data from the in-depth interviews.

The in-depth interviews revealed seven key success factors of social farming: entrepreneurship and strategic management, design thinking and innovation, partnership, evoking development

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opportunities, providing an ordinary context and enabling to perform meaningful work. The IDBM incites to take all of these key factors into consideration, be it implicitly or explicitly. An obstacle in this matter is the fact that the social factors, unlike economic factors, sometimes are hard to measure, because some are implicit and/or only noticeable on the long-term, which results in difficulties to define indicators of social impact.

The social farmers who showed an innovative attitude, were able to benefit from the IDBM the most by gaining more and realistic ideas.

The students developed essential skills like collaboration, communication, reporting in a professional way, receiving and giving feedback and dealing with deadlines. They dealt with the emancipating and connecting power of social agriculture and became acquainted with the Italian discourse concerning social farming, which is focused on social inclusion and the reintegration of socially excluded persons through labour on farms (Dessein et al., 2013).

Above all, because the teams were multidisciplinary, the students were forced to approach the cases from a cross sectoral point of view and perspectives different from their own background and discipline.

CONCLUSION

The Impact Driven Business Model is a useful tool for social farmers to reflect on influencing factors in social entrepreneurship. Whereas governments undeniably are limiting their financial support increasingly, a hybrid revenue model becomes interesting for farmers who want to create both social and economic impact. The model is applicable for starters as well as for experienced social farmers to support them in taking every important aspect of their social enterprise into consideration.

However, in order to monitor the goals, policies and activities and to measure the social impact, a secondary tool is needed and further research on the implementation of the business plan is required.

The composition of a multidisciplinary team has demonstrated its value in many ways. The viewpoints were complementary and innovative by looking at the topic from different point of views.

Social farmers are therefore advised to let them be supported by a similar monitoring team, advising them on several topics, in order to keep the balance between social and economic value creation.

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WG5 – WG16 Entrepreneurial skills and competences | with Focus on Gender aspects

Workin group 5 and 16 have been merged.

WG5 - Entrepreneurial skills and competences, knowledge and innovation systems and new learning arrangements

Rural entrepreneurship plays a key role in capturing innovation, maintaining and developing communities, providing job opportunities and moderating the relationship between farming, land-use, community and economic development. Whilst changes in the environment, ageing demographic and alternative demands on land use have in recent years placed stress on the rural entrepreneurial ecosystem, the accelerating rate of urbanization brings into question how rural businesses can be understood in an urbanizing world.

Urbanization is a phenomenon that encompasses the developed and developing contexts. Whilst these contexts have often been conceptualised within the separate fields of Rural Entrepreneurship in the developed world and International Development in the developing world, 'traditional' rural businesses are under pressure to change: with farm and non-farm rural entrepreneurs required to continuously update their skills and competencies in order to survive the challenge of, and provide for, an urbanizing society.

Brunton et al (2010) suggest that entrepreneurship research either ignores emerging economies or at best uses them as test-beds for theories established in mature economies, whilst theories for the developing world specifically tend to fall within the fringe of the International Business discipline.

The track is focused on original multi-disciplinary papers that explain the various phenomena that relate to urbanizing rural entrepreneurship and integrate these wider contexts. Papers may encompass either the developing and developed contexts, with those that address both particularly welcome. Papers may relate to ontology / epistemology, 'grand theory', or key areas in rural entrepreneurship such as:

1. *Entrepreneurial skills and competencies*
   a. *Farms and farmers*
   b. *Non-farm business*
   c. *Non-traditional rural sectors (Home-Based; Informal)*
2. *Change in knowledge and innovation systems*
   d. *Dynamic entrepreneurial eco-systems / Regional Innovation Systems*
   e. *An evolving Rural-Urban dichotomy*
   f. *Institutional approaches (socially productive / destructive)*
3. *New learning arrangements*
   g. *New Rural Paradigm(s)*
   h. *'Adaptive' forms of organisation*
   i. *Technological delivery systems*
4. *Informal sector and illegal rural enterprise*
5. *Home-Based Business (incubators; industrial restructuring)*
6. *Environmental sustainability*
7. *Institutional frameworks and rural governance*

We welcome papers from any methodology and strongly encourage collaboration between colleagues in developing and developed countries.

Papers will be considered for a special issue of the International Journal of Entrepreneurship and Innovation: http://www.ippublishing.com/ijei.htm

Convenors:

Professor Gerard McElwee, University of Huddersfield, United Kingdom
Dr Robert Newbery, Plymouth University, United Kingdom

WG16 - Gender aspects of multifunctional agriculture

The agricultural sector is the most dominant source of employment, livelihood and income for people living in developing countries both directly and indirectly. Both women and men shape the way agricultural production and trade are practiced. FAO's estimates show that women represent a substantial share of the total agricultural labour force, of which two-thirds are either individual food producers or agricultural workers. And, women play a major role in local and cross-border trade. However, in many places tasks are clearly divided across gender lines and decision-making is often dominated by males, whereas a large part of the work burden is upon the women. Therefore, decisions are mostly based on economic considerations rather than labor-intensity or stability.

Despite all the economic opportunities associated with increased globalization and international trade, the benefits for women in the developing world are often lower. They are for example unable to compete in overseas markets or widen their production units and many are exploited. Even though globalization triggers migration and pulls out the male labour out of farming, the trend of feminization of agriculture increases the work burden but often does not increase their room to maneuver and freedom in decision-making. As the traditional 'nurturers' of families, women involved in agricultural activities tend to be strongest in regard to social attributes such as health and cultural considerations but are often disadvantaged, when it comes to access to markets, marketing of commodities, knowledge on innovations or employment opportunities, which all determine access to food. The informal nature of their operations not only limits government revenue but also constrains income growth by limiting access to formal credit and exposes them to economic and social exploitation. These and other social-institutional constraints faced by women tend to make them more vulnerable than men.

Evidence shows that resources controlled by women are more likely to be used to improve family food consumption and welfare, reduce child malnutrition, and increase the overall family wellbeing. It is therefore necessary to have a thorough analysis of how agricultural policy, strategy and planning can be improved to positively impact food security, nutritional status, income, and equality and hence economic development from a gender perspective. This Working Group will look into the ways women shape agricultural systems differently than men. Women's strengths and constraints will be illuminated in regard to the economic, social and environmental attributes of agricultural production and trade systems. The group will combine discussions of genderfocused approaches (empowerment of women) and gender-integrative approaches (representation of gender issues) in development strategies and invites presenters to showcase examples from diverse places across the globe. The main and final objective is to develop a vision for gender-sensitive agriculture, which might include relevant aspects of production, sustainable practices and trade. Such assessment is crucial to the successful development of any programme or policy concerned with increasing the benefits from agricultural production and trade in the Global South.

Convenor:

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Between individual and collective entrepreneurship: how to puzzle out rural entrepreneurship?

Marcello De Rosa[1]

***Abstract* – The paper aims at analysing entrepreneurial paths in rural areas and the needs for skills in order to second various strategies. The analysis is based on a case-study of a rural family business (CasaLawrence in region Lazio, Italy), which has promoted an innovative model of rural entrepreneurship focused on the valorisation of endogenous rural resources and on the full employment of family members. The evolution of entrepreneurial skill in the farm and the needs for further updated skill will be investigated through the support of a questionnaire submitted to the family members. The results of our analysis confirm the goodness of a collective entrepreneurial model totally based on the contribution of family members.**
***Keywords* - rural entrepreneurship, family business, geographical indication**

INTRODUCTION

Two perspective of "rural" may impact on rural entrepreneurship and on rural innovation:
a. Rural as space of production, with the progressive transition toward multifunctional paradigm. Here, different entrepreneurial opportunities are at stake:
• Individual entrepreneurship carried out through the development of alternative food networks and through the qualification of niche products;
• Collective entrepreneurship carried out through valorisation of collective marks, like geographical indications.
b. Rural as space of consumption, through the supply of a basket of goods and services, within integrated projects of rural development.

Against this background, entrepreneurial skills of farmers need to be updated, in order to fulfil learning gaps linked to the development of new activities.

In the farming sector, a family business perspective may enrich the analytical framework and explain entrepreneurial processes (Jervell, 2011).The paper fits in this context and aims at analysing either entrepreneurial paths in rural areas or the needs for skills in order to second strategies of product differentiation and farm diversification.

The analysis is based on a case-study of a rural family business (Agricola Pacitti-Casa Lawrence in region Lazio), which has promoted an innovative model of rural entrepreneurship focused on the valorisation of endogenous rural resources and on the full employment of family works.

MATERIALS AND METHOD

In order to understand how household strategies influence the development of family business, we put forward a case-study of a family farm working in a remote rural area, the municipality of Picinisco(Comino Valley), in region Lazio (Italy). Here family farm Pacitti has built up a solid business in a relatively short span of time. Through the help of a questionnaire we have interviewed the family members in order to apply Vesala et al.'s (2007) entrepreneurial identity model, with the purpose to look into individualistic and economic values.

RESULTS

Context: life coincidences and entrepreneurial turns
Many years ago, two brothers rented a rural building in Picinisco, in order to breed sheep and goats and to localise their activity next to the market. Things were going well, thus they decided to expand their business, by raising the number of sheep and goats (from 50 to 200). Two "turns" have influenced the entrepreneurial process: the first was when the two brothers married two girls living in England and coming to Italy in summer time. The presence of the women encouraged the expansion of farming activity, thenbecoming a family farm business.

The second "turn" was in the '80s, with the discovery of famous English writer's D.H.Lawrence transit in the Comino Valley and his living in their house for a couple of weeks. Lawrence's romance "The lost girl" was placed in that area, therefore Pacitti family decided to diversify farms in non-farming activities, by opening up an agritourism recalling the writer's name: CasaLawrence. To this end, in the mid-90s' the alert Loreto (one of the two couple's children), decided to apply for a regional grant for rural development, in order to raise funds for supporting family's strategy: he got funds, restructured the house and finally succeeded in opening up Casa Lawrence. In the meantime, milk and cheese production had been developing, thanks to the rise of the herd (200, 500 and, finally 800 heads!) and thanks to the high ability in cheese-making developed by Loreto's cousin, Romina, the other alert entrepreneur of the family.

ANALYSIS

The transition towards multifunctional agriculture has been pursued through both a supply chain and a territorial strategy. As far as supply chain is concerned, on the production side, milk processing, cheese-making and product differentiation are key elements of farm's strategy. On the market side a strategic niche management (van der Ploeg, 2008) has been planned through direct selling on a local, regional and national level but always within niche markets.

As far as diversification in non-agricultural activities is concerned, the opportunity of building and agritourism where a famous English writer had lived was fully exploited, thanks to the employment of the family members.

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The two strategies (farm diversification in agricultural and non-agricultural activities) were possible in account of: a) the specific quality of the cheese: the heard is put to pasture on the mountain and sheep are reared though methods which safeguard animal welfare: therefore, local area gives the milk specific characteristics well described in the code of practices of the Pecorino di Picinisco Cheese with protected designation of origin.
b) Territorial attractiveness of the farm. The farm is located in Comino Valley, in the Natural Park of Abruzzo Lazio and Molise in a beautiful rural and attractive area.

Therefore, transition towards multifunctional paradigm of agriculture is strategic choice in performing Pacitti's economic activity, by reshaping the role of the farms along the food supply chain (with a higher share of added value in the farm) and by exploiting territorial resources (natural, cultural, symbolic, etc.) through strategies of on-farm diversification.

From what above, a further aspect needs to be underlined: it concerns the relevance of collective entrepreneurship (complete involvement of family members). As a matter of fact, the availability of family members to be involved in farming activity should be taken into account in order to explain the success of the family business: this differentiates our case-study from other strategies failed for the lack of available family works (McElwee et al., 2006). In our case, a clear division of labour within the family business: females work in cheese-making and in the meal preparation in the agritourism; males are involved in grazing, milk producing and trading activities. A key role is played by Loreto: he left a harmless career in the army to invest in a risk-taking activity: wasn't him an alert entrepreneur? The first thing he did was to buy a milk processing machine, in order to process the milk and make cheese to be tradedthrough direct selling methods; the second thing he did was to apply for a grant from rural development policies, in order to raise funds to open an agritourism.

The strategic choice of diversifying in agricultural and non-agricultural activity brings the discussion about entrepreneurial skills required in order to fulfil these complex activities.

ENTREPRENEURIAL IDENTITY

As underlined in literature, generational renewal acted as an engine towards farm diversification (McElwee, Bosworth, 2010). Moreover, personal control, self-efficacy and optimism seem to be typical traits of both the "evident" and the "dark" leaders of the family: Loreto and Romina. Diversification strategies along the supply chain and the territorial extended strategies were possible in account of a clear entrepreneurial attitude:risk-taking, growth orientation and innovativeness.

CONCLUSIONS

Literature on rural entrepreneurship is of help in correctly analysing our case-study. More precisely, two key elements have to be underlined (Rudman et al., 2008): the first one concerns how the entrepreneurial behaviour is initiated, the second one relates to the developing of entrepreneurial skills in the family farm. As far as the entrepreneurial behaviour, Loreto's personal traits gave a strong contribution to stimulate farm transition towards the multifunctional paradigm; the other key-element concerns the entrepreneurial skills within a process of collective entrepreneurship: as a matter of fact a clear division of labour taking into account specific entrepreneurial skills of the family were adopted: basic skill characterised family members in the elderly stages of the life cycle, while entrepreneurial skills were in the hand of Romina and Loreto: creating networks, recognizing and realizing opportunities, developing and evaluating a strategy is the result of a collective entrepreneurship where the personal traits of the two cousins are evident.

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The LEADER Initiative in Apulia Region: a way for smarting the rural-urban relationships?

Contò F.[1], Djelveh S.[2], Conte A. [1], Molnar A.[3], Gellynck X.[3]

***Abstract* – Europe is at an economic and social crossroads and nowhere more so than in rural areas. The growing interdependence between urban and rural areas is nowadays generally acknowledged; at the same time, farms, and agri-businesses in general, are called to address a growing innovation demand requiring the transformation of the sector's production system. Considering Apulia Region as illustrative for the innovation gap that separates urban areas and rural areas, the paper presents the LEADER Initiative as a successful example that can contribute for organizing of rural-urban partnerships.**

***Keywords* – LEADER Initiative, New Rural Paradigm, Rural-urban strategy.**

INTRODUCTION

Europe is at an economic and social crossroads and nowhere more so than in rural areas. The continent faces the challenge of creating smart, inclusive and sustainable growth while dealing with an ageing population and demographic changes. By 2060 an estimated 20% of Europeans will leave rural areas for towns and cities, a trend threatening the viability of the agri-food sector[2]. Such demographic changes threaten to leave rural regions behind, and put pressure on the security and growth of the European economy. There is an urgent need to extend the growth agenda beyond smarter cities to include Europe's rural regions. The growing interdependence between urban and rural areas is nowadays generally acknowledged (Contò et al, 2015). In order to maximise the benefits from these relations, it is crucial to identify actions that overtakes the different sectorial approaches to address a territorial approach in which rural areas and communities are not marginalized but are enabled to contribute to the sustainable local development. The challenge, particularly strong for the rural actors, is thereby to capitalize and improve the quality and quantity of rural-urban relations, within a context that won't be top-down designed. In this paper we explore the possibility of capitalizing the experiences from the LEADER Initiative to strengthen and organize rural-urban partnerships and support the diffusion of in-novation among these areas.

METHODOLOGY

This conceptual paper integrates the results from a previous publication(Contò et al, 2015) to present a summary of the conceptual framework behind the analysis of factors enhancing the spread of innovation in rural areas and the possible role of LAGs within rural-urban partnerships. Within the previous analysis carried out, we proposed a methodological approach to integrate the living labs experiences within the rural-urban partnerships to develop a strategy for Smart Rural-Urban Relations using living labs. In the next sections we present a brief summary of the conceptual approach developed in order to analyse the possible contribution of the LEADER Initiative to the rural-urban relations.

LEADER AND INNOVATION

Apulia Region can be considered as illustrative for the innovation gap that separates urban areas and the surrounding rural areas: despite the substantial progresses experimented in Bari urban development, the surrounding rural and periurban areas are still characterised by a scarce capability to innovate (Contò et al, 2015).

Starting from the analysis of this innovation gap, we have explored the role of rural communities engagement in contributing at more sustainable rural-urban relations and the existing experiences to this regard. The LEADER Initiative from the Rural Development Programmes funded by the EU is explicitly aimed at facing the rural challenges. Over the past 20 years, the LEADER Initiative has been the main tools to encourage local participation in the designing and implementation of sustainable development strategies, providing the European rural communities with a method for involving local partners in steering the future development of their area (EC, 2006). The practical implementation of LEADER is carried out through Local Action Groups (LAGs): these are made up of public and private partners from the rural territory, and must include representatives from different socio-economic sectors. LAGs can represent a priceless source of information on the needs of local stakeholders and actors, as a well as a driving force for involving the local communities (Schnaut et al., 2012). The role of LAGs is currently evolving, shifting from the community animation to the development management (ENRD, 2010), thus acquiring a clearer advisory function. Even if this evolution is notcommon to all the LAGs, a similar transformation of the LAG could in effect be a driver for the engagement of these actors within a comprehensive Smart Land strategy for the territory.Another factor to take into account is the double direction of linkages between urban and rural areas and how it reflects on the innovation capacities of these areas. Several authors (Allen, 1999; Bonomi, 2013) have highlighted that there are complex interactions influencing the rural-urban interface and that these interactions should be analysed in terms of the impacts on the territory of the main flows (of people, money, information, national resources and wastes) affecting the rural-urban linkages. If flows and interdependencies are not effectively managed, rural-urban linkages can increase the vulnerability of the most vulnerable groups, particularly urban and rural poor (UN-HABITAT, 2008-09). Thus, the management of these flows impact the innovation capacities of the

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[2] http://www.unicef.org/sowc2012/urbanmap/#

territories.Innovation can be defined as the successful exploitation of new ideas into new products, processes, markets and ways of organizing (Pittaway et al., 2004). Innovation patterns in rural areas are normally slower and less frequent than in urban areas, because of their low density and relatively poor level of human and physical resources, as well as for their weaker linkages with research and development centres. To this extent, in order to analyse the patterns and success-factors for the diffusion of innovation in "thinly populated areas" (DG REGIO, 2014) or territories poorly equipped by "traditional innovation markers" (DATAR, 2012), the proposed research will analyse good practices examples in Italian LAGs and related communities from the ENRD database, based on the six categories identified by the DATAR (creativity, research activities, network and communication, consumption, skills and education, funding systems) and their related variables. The aim is to identify the factors enhancing the creation of innovative ecosystems engaging the local communities in rural areas.

EXPECTED RESULTS

The first expected results regards the balance between strong social capital and the ability to renew it through external injection, as suggested by Terluin(2003). One of the strengths traditionally recognised to cities, is the variety in the combination of different actors, which are generally not present or poorly connected in rural areas. Another important category of actors is the one represented by intermediary organizations and innovation or knowledge brokers. Howell defines this type of actors as "An organization or body that acts an agent or broker in any aspect of the innovation process between two or more parties"(Howells, 2006).

With respect to the LEADER Initiative, an important issue is to understand if LAGs can or cannot work as innovation brokers in rural areas. Even if the theory suggests that it should be possible, in practice this should be measured against the real skills and competences of LAGs. Eventually, the quality and educational level of the involved community is expected to be an enabling factors for the creation of innovative ecosystems in rural areas, as suggested by several authors, including Rosenfeld (1985) with regards to the relations between the educational level of communities and the overcoming of the economic isolation imposed by natural barriers such as mountains and rivers, and lack of communication or transportation facilities.

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Relationships between Regional Agricultural Innovation Systems and Entrepreneurial Ecosystems: An Empirical Analysis

Torquati B., Illuminati R., Cecchini L., Venanzi S.[1]

***Abstract* – The present study analyses the relationships between Regional Agricultural Innovation Systems (R-AIS) and entrepreneurial eco-systems in an Italian Region, Umbria, where 137 projects of agricultural innovation, involving 692 partners , were eligible for funding over the last seven years (2009- 2015) within the framework of Rural Development Programme, through the Measure 124.**
***Keywords* – Agricultural innovation, Umbria Rural Development Programme, Olive oil sector.**

INTRODUCTION

Within the framework of the 2007-2013 program-ming period, the Umbria Region, through Measure 124 of Rural Development Programme (RDP), has used the public-private partnership as a means to strengthen «networking, knowledge, co-creation and collaboration between different partners» (Hermans et al., 2012; p. 9). This has encouraged the implementation of a systemic innovative model based on the creation of a network of actors. The model, which is characterised by a bottom-up approach, has allowed the development of an "Innovation Community" (IC) and the strengthening of a Regional Agricultural Innovation System (R-AIS). The R-AIS is defined by the World Bank as «a network of organizations focused on bringing new products, new processes, and new forms of organization into social and economic use, together with the institutions and policies that affect their behaviour and performance» (World Bank, 2007; p. 18).

The R-AIS takes the contribution of the whole system of network actors to create the innovation supply chain, from the beginning of the process to the knowledge transfer stage (Torquati et al., 2015).In this context, the policy maker applies a Growth-Oriented Enterprise Policy, characterised by "relational" forms of support such as network building, developing connections between entrepreneurial actors, institutional alignment of priorities, fostering peer-based interactions, in place of a Traditional Enterprise Policy, where the main forms of assistance are "transactional" forms of support such as grants and subsidies. The entrepreneurial and research systems are instead the real driving force of the innovation process, since they support farmers through intermediaries (OECD, 2013). With the aim being to describe the R–AIS phenomenon, an emerging approach focused on "entrepreneurial ecosystems" (EE) has been used, drawing on Mason and Brown definition: «a set of interconnected entrepreneurial actors, institutions, and entrepreneurial processes which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment» (Mason and Brown, 2014).

METHOD

In order to measure the innovation capacity ex-pressed by the R-AIS, a statistical analysis (principal component analysis and cluster analysis) has been carried out. 137 projects have been analysed taking into account the action plan, the ability to create partnership, the ability to involve enterprises of the primary sector, the level of integration with other measures of RDP and the financial dimension of the project.

The quantitative analysis has been followed by a qualitative study focusing on 15 projects related to the olive oil sector so as to identify the possible EE.

The qualitative study considered 4 variables: i) the geographical distribution of the project as a measure of the influence of the location area; ii) the number of agribusiness partners as a measure of the internal dynamism of the olive sector ; iii) the leading partner as a measure of public and private support; iv) the presence of the same subject in different projects as a measure of their interaction.

RESULTS AND DISCUSSION

The success of Measure 124 in the Umbria Region is highlighted by the implementation of 137 partnerships, all of which involved the Technology Agribusiness Park of Umbria as innovation broker, and 692 other partners (456 farms, 67 processing companies, 58 services providers, 68 public research institutes, 4 private research institutes, 39 producers associations). Innovative projects mainly involved livestock, wine, cereals and olive oil sectors.

Six clusters resulted from the statistical analysis (Figure 1), showing two main trends. The first one is characterised by projects presenting a high correspondence with policy purposes, a large number of partners, a strong presence of the primary sector, and innovations related to environmental and commercial issues. The second trend is represented by mixed partnerships that are identified by low and average values of the variables considered. Moreover, the presence of innovations aims at developing new products and processes, primarily. In addition, by looking at Figure 1, it is possible to underline the interconnection network between different projects due to the recurring presence of the same partners. In these cases, the interaction between projects occurs through agricultural enterprises, often the most numerous, thus confirming a strong tendency to innovation and dynamism in the sector.

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The geographical distribution of the projects (Figure 2) emphasizes that the historical and cultural component of the region has played an important role both in the number of projects and in the environmental innovations implemented. The leading companies have different nature and distribution. For example, Todi has proven to be the "fortress" of innovation, due to the presence of the Technology Park, while in Trevi and Spoleto, innovations have been driven by processing companies. Associations of producers have encouraged projects in the area of Perugia, where their headquarters are located. Service companies have played an important role in the Terni district.

Although olive trees are cultivated throughout the Region, the analysis highlights the presence of areas where EE has a greater number of interconnections generated within the local entrepreneurial environment (Foligno and Trevi), and areas where the EE has a lower number of interconnections driven by a single actor (Terni and Montefalco).

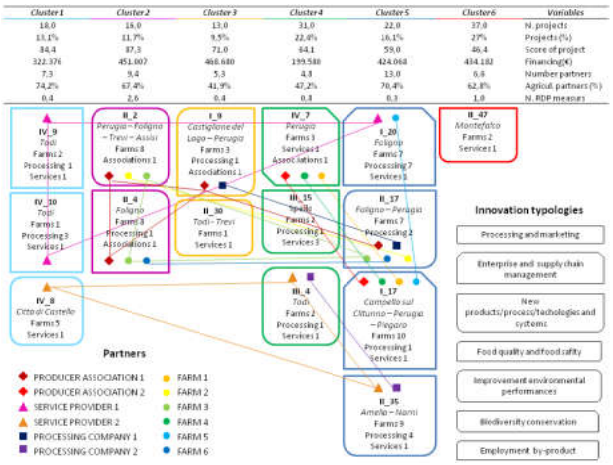

Figure 1. Innovation's Main features of the olive sector in Umbria Region

CONCLUSION

The study has presented a R-AIS characterised by a strong interaction between the actors of the network. Measure 124 has indeed promoted the implementation of cooperation activities, allowing farms to be protagonists in the innovation process. In this context, the olive sector, as an historical, cultural and economic landmark of the Umbria Region, has showed how the EE can successfully integrate itself with the R-AIS, allowing farms to innovate and increase their competitiveness within a dynamic network.

The main weaknesses can be ascribed to: i) the isolation of some areas (Terni and Montefalco); ii) the poor number of partners in comparison with other sectors; iii) the low integration and coordination level in some projects, during the innovation construction process. These issues have to be taken into account, within the framework of programming period 2014-2020, when establishing the European Innovation Partnerships (EIPs) in order to ensure a more efficient management of innovation processes.

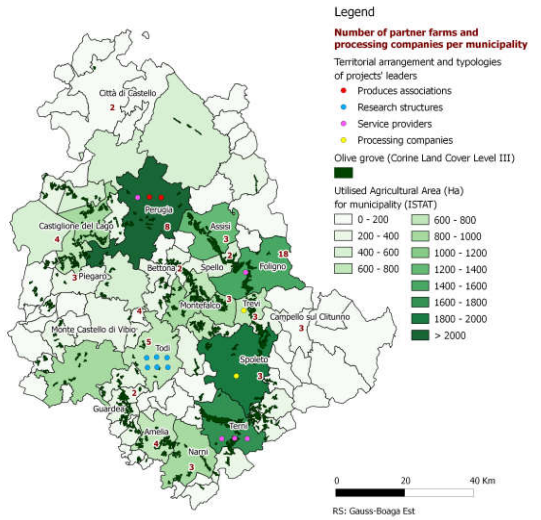

Figure 2. Geographical distribution of olive cultivation in the Umbria Region and innovative projects implemented by Measure 124 RDP

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Local cultures and global discourses in emerging rurality

Montserrat Soronellas-Masdeu, Yolanda Bodoque- Puerta[1]

Abstract **– The aim of this research is to study certain economic, social and cultural initiatives that have emerged in rural areas, particularly over the last decade, as ways of dealing with the current structural crisis affecting small towns and villages and their traditional form s of reproduction in Catalonia, Spain. The study of how these emerging initiatives are manifested and the specific forms they take will not only highlight the role of the state and the market, but will also reveal how local populations adapt to or resist them, generating through this process new images and values, and a demand for new services and proucts. Our initial hypothesis is that these initiatives arise from the combination of, first, the cultural elements (in the broad sense) that have traditionally guaranteed the social reproduction which provided meaning and cohesion in rural communities; and, second, factors that are firmly embedded in contemporary conditions of life and globalised society, such as tourism, international migration or environmental awareness. The combination of these two sets of factors, traditional rural and agrarian culture on the one hand, and the ways of life, contemporary sensibilities and scientific culture on the other, has been used by rural communities (stimulated in the last decade by the favourable context offered by European rural development aid) in development projects, some of which are now established and widely known (rural tourism, agricultural transformation or organic farming), and other emerging, pioneering, less familiar and perhaps more domestic projects (small-scale organic initiatives, recovery of biodiversity, agricultural education, etc.) that have helped to overcome the hurdles to the continuation of what is now a more diverse rural way of life, and to bridge the urban-rural gap.**

Keywords **– Rural depelopment, new rurality, agroecology, rural entrepreneurship, Catalonia, anthropology.**

INTRODUCTION

Neoliberal and global economic systems have had a major influence on agricultural economies and the conditions of reproduction in rural communities particularly in the second half of the twentieth century (Etzetarreta and Viladomiu, 1997). Depopulation, masculinisation, population ageing, falling agricultural activity and the lack of economic alternatives that guarantee their social reproduction are among the most pressing problems in these communities (García Coll and Sánchez, 2005; Roquer and Blay, 2008).

However, despite the trend towards globalisation today's rurality is not homogeneous (Horáková and Boscoboinik, 2012). Globalisation has spawned processes of relocation and resignification of local cultures (Appadurai, 1995), processes that are now essential resources for guiding development projects in local communities. Stimulated by EU agricultural and rural development policies, cultural heritage, specialisation in exclusive high-quality agricultural or artisan products, the landscape or environmental quality are now key aspects of our new ruralities, which despite their focus on the local, the singular and the diverse, are still framed within the neoliberal economic model.

METHODOLOGY

The following methodologies are used in the research: 1) the ethnographic method, 2) the comparative method, and 3) the processual perspective. The ethnography forms the basis of the research and guide the study as a whole. Life stories, in-depth interviews, discussion groups and participant observation allow us to approach the subject of the study from a micro, holistic and qualitative perspective. Comparative methodology reveals the similarities and differences between the various units of obser-vation and the topics to be studied in each community and geographical region covered in this research. The processual perspective provides understanding of how the initiatives and strategies related to the redefinition of rurality are created and re-created by considering, through a historical lens, the socio-economic, cultural, political and demographic transformations that have affected the areas studied since the beginning of the twentieth century.

SOME RESULTS

In this research we have analysed the repercussions of rural development policies in Catalonia (Spain) thirty years after European funding began (Sorone-llas, Bodoque and Torrens, 2014). From our fieldwork (observation and interviews) in 13 rural Catalan communities with populations below 2000 we identified three types of rurality, in terms of economic activity:

1) Communities where agriculture is the main activity, of which there are three variations: first, communities that have followed the conventional intensive farming models; second, those that have opted for innovative agricultural projects by targeting and adding value to local products; and third, depressed rural areas whose economies are based on traditional extensive peasant agriculture.

2) Communities near urban areas with good transport systems that have combined intensive agriculture with industrial activity to diversify economically.

3) Communities in attractive environments and landscapes (often in mountainous areas) where service sector activities, particularly related to tou-rism, have replaced agriculture.

Although agricultural activity continues, there is a trend towards deagrarianisation in areas that have not managed to adapt to the productivist logic of the

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market (Gómez, 2001; Bonnamour, 2001)). Some of these rural areas have been unable to develop alternative models (depressed zones), but others have established tertiary economic activities targeted at city dwellers (the third type) including leisure spaces and activities, nature and landscapes, cultural heritage, sports, original and healthy food products, and education and environmental quality, among others (Berger and Chevalier, 2001).

These new diversified –and often no longer agricultural– rural societies (Boscacci, 1999) provide a favourable context for what we call "emerging ruralities". Here, social and cultural initiatives have developed, expressly linked to agricultural production, that are put forward as alternatives to conventional initiatives and that share a common goal of safeguarding the reproduction of rural communities by reintroducing agricultural and livestock activities. What the individuals behind these initiatives aim to do is to bring back agricultural production to rural areas, starting, consciously or otherwise, from ideologies related to ecology, agroecology and food sovereignty.

These initiatives consist of bringing back traditional agricultural and livestock-related economic activities, trades and forms of production and distribution; reintroducing local varieties; combining organic production with local consumption; promo-ting the therapeutic benefits of agricultural activity; agricultural education and raising awareness; or repopulation and returning to abandoned ways of life. These are very personal projects that often reflect a certain utopianism and romanticism in res-ponse to the dominant neoliberal model.

The current focus of the research is to describe and analyse some of these experiences of emerging rurality. Our aim is to conduct a qualitative analysis of the initiatives to learn about the initial conception of the projects, their evolution and their current dynamics, but also to discover the ideas that drive the people behind them. The method we follow is to select the "emerging" initiatives based on a combination of study variables (scope of the initiative, area of operation, personal characteristics of the promoters) followed by in-depth interviews with the individuals leading these projects.

The people behind these initiatives are young, highly qualified in specific fields of agroecology, renewable energies and environmental sciences, or even professionals with social science or humanities degrees who have changed career to prepare and launch projects for agricultural renewal. These people either have a connection with the area where they set up their projects, or they made a personal choice to move there from the city. The initiative may have emerged as part of a couple's life project or as a group social economy project. Finally, but just as importantly, the promoters of most of these initiatives identify strongly with a certain ideology and lifestyle and often adopt a combative attitude and discourse based on concepts taken from agroecology, sustainability and food sovereignty.

In sum, the proven unsustainability of the neoliberal development model has given rise to social initiatives, put forward as alternatives, that reflect the need to bring back local cultures and their forms of social and economic management in order to understand that traditional agricultural knowledge combined with current scientific expertise can provide a solution to some of the challenges (environmental, social and economic) posed by industrialised agriculture and the concentration of the world's population in urban areas.

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Barriers and opportunities for entrepreneurial wetland farmers in Zambia

A. Wood, G. McElwee[1]

***Abstract* – The improving communications between rural areas and urban centres in Africa is well known for its stimulus to rural enterprise and entrepreneurship. This is no longer impacting only immediately around urban centres but even hundreds of kilometres away. Such urban market opportunities may not only lead to individuals developing specific enterprises to address specific niches, but may also stimulate technology development and institutional formation and coordination.**

This paper reviews the case of wetland farmers in Mpika, northern Zambia, where market opportunities first opened up by the tarring of the Great North Road in the early 1970s have become much stronger after the expansion of the mobile phone network after 2005. This has combined with the development of an innovative off-season wetland farming technique by groups of farmers supported by a local entrepreneur and innovator to create a major supply of vegetables to the urban markets on the Zambian Copperbelt 400 km away, and into the mining complexes in the neighbouring Democratic Republic of Congo. To sustain this production and to coordinate marketing over such distances farmers have formed two types of community institutions, village natural resource management committees and marketing groups. Growing from some 40 such wetland farmers in 2008 there are now over 200 engaged in this production in three wetlands in the Mpika area.

This case study shows how one innovative entrepreneur with a social conscience has been able to both learn from some farmer groups and on his own develop new techniques which he has shared with several communities. Combined with improving urban market access, these increasingly urban focused farmers have developed new social capital – in the form of wetland management and marketing institutions, and have been able to meet both their subsistence needs and progress to different scales of production and engagement with the urban markets, local and far away. Specific case studies of three farmers exemplify the nature of this experience and explore the ways knowledge has been developed and disseminated.

***Keywords* - Zambian farmers, farm enterprise, wetland cultivation, dambo cultivation, rural entrepreneurs**

INTRODUCTION

This paper reviews the experience of wetland farmers in Mpika, northern Zambia, where market opportunities, first opened up by the tarring of the Great North Road in the early 1970s, have become much stronger after the expansion of the mobile phone network in Zambia, after 2005.

It focuses on the early stages of transformation from *farmers* to *farm entrepreneurs* and explores the way in which the sustainable development of agriculturerequires the development of entrepreneurial and organisation competency of farmers (McElwee, 2008).

The aim of the paper is to investigate the barriers and opportunities for the adoption of an innovative off season farming technique by local farmers supported by a local entrepreneur and innovator. It explores the challenges of developing and sustaining this new form of production and coordinating marketing and shows how farmers have been able to better meet subsistence needs and progress to different scales of production and engagement with urban markets, locally and far away.

METHODS

In-depth interviews were held with 40 farmers in four sites in the Mpika and Serenje areas in northern Zambia as well as mini workshops with other stakeholders: traders and government officials, and project staff who were involved in a three year farmer support programme between 2006 and 2008.

RESULTS AND DISCUSSION

The findings show a complex process of farm development over the last 25 years in this area. Opportunities for farm diversification began in the early 1990s through the development of an innovative off-season wetland farming technique developed by a local agricultural extension officer. Learning lessons from an emergency farming method traditionally applied in famine years, he produced a controlled soil burning method which could help address acidity and waterlogging problems in the large seasonal wetlands, or *dambos*, in this area. This was found to be relevant to specific zones in the *dambos* where there is a good supply of seepage water.

This method was applied first by a group of farmers in the Serenje area who focused on producing Irish Potatoes which were in demand in the urban centres of the Zambian Copperbelt. Access to these markets was initially on a small scale through the sale of bags of potatoes to lorry drivers en route to the Copperbelt, but in time with the growing urban market demands these farmers developed a division of labour in marketing with the men hiring small trucks to take their produce to the urban markets while the women developed a major roadside market, which is also now a tourist attraction. Periodically demand outstrips supply, and additional supplies of potatoes have to be brought in from neighbouring Tanzania, at present using the lorries coming down the Great North Road, but in future possibly through hired vehicles, as with the Copperbelt marketing trade.

This wetland farming technique was subsequently introduced into the neighbouring Mpika area by the

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same agricultural extension officer, who in 2006, became the agricultural coordinator for a local NGO.

By 2008 there were some 40 farmers growing a variety of vegetables in this way, focusing on meeting the food gap in January and February before the first rain-fed crops are produced. This is the time of year when food prices are highest in the villages and also in the small urban centres in the area, such as Mpika. With time and in specific rural circumstances groups of farmers coordinated their marketing using mobile phones to contact local and Copperbelt markets and subsequently hire trucks to transport to these markets (Ndiyoi et al 2009). By 2015 the number of farmers who had diversified into wetland farming had grown to over 200 in these three wetland areas, and some had coordinated their marketing to reach the industrial towns in the Democratic Republic of Congo (DRC).

To develop these new forms of production, ensure sustainable use of the resources and coordinate product marketing and selling over such distances farmers have formed two types of community institutions: village natural resource management committees (VNRMCs) and marketing groups. The former are associated with the village headman system and are the mechanism through which villagers gain access to cultivation sites in *dambos*. The VNRMC supervises the way in which the controlled soil burning method is taught and monitors its implementation, while methods for improved catchment management are also introduced in order to maintain the seepage flows into the *dambos*. The marketing groups are less permanent, with farmers cooperating on an *ad hoc* basis and periodically. However, with the market in DRC being so large, some farmers are now coordinating production and marketing from the outset and choosing their crops with a view to exporting to the DRC market.

As yet such successful groups are a very small part of the developing wetland farming initiative. They represent the peak of coordination and collaboration which it seems most farmers are unable to achieve. For the majority the focus is the local urban market in Mpika and there are barriers which constrain scaling-up their production.

For many farmers getting produce to markets is a major challenge. Head carrying is the traditional method along village paths, and one of the first investments of profits from wetland farming is usually a bicycle to address this bottleneck. The next investment is a mobile phone to contact traders at the local market. Another barrier had been produce from large-scale commercial farmers some 200 km away in Mkushi, which had flooded the Mpika market. This was addressed through the 2006-2008 project by coordinating local farmers to bring their produce to market early, ahead of the commercial farmers, and to sell it on credit to market stall traders, thereby undermining the later arriving commercial farmers who required cash sales.

Other barriers to wetland diversification can be access to land and labour. Land has become scare in some of the *dambos* as a result of the interest in the controlled soil burning method and its ability to produce crops at a time of year when food prices are high. This has led some farmers to get permission from their village headman to relocate and open up new *dambos* for this type of cultivation. Labour is a bottleneck as many households are labour short, but income from vegetables allows farmers to buy-in help from their neighbours who have not adopted the new farming methods.

Opportunities which are created by wetland farming are many even when operating at a small scale for the local market. The first, as mentioned above, is to use income from wetland produce to obtain bicycles to transport produce to market and phones to communicate with potential markets. While scaling up through access to larger plots and the employment of labour or coordinating production and marketing to distant urban centres are strategies few farmers have taken; for many the risks of employing people and collaborating in joint marketing seem to be too great, at least with their limited entrepreneurial experience. Hence for others wishing to progress beyond the limitation of the local market in vegetables the route seems to be further diversification into rearing chickens or pigs. For one village, "freedom" and family labour have been the main opportunities from wetland farming. As a result of this new enterprise and the generation of income in this way, their former poaching of game in the nearby national park has terminated, and they no longer lose the labour and support of many young men fwhile they serve a gaol sentence!

CONCLUSIONS

The experience in northern Zambia of wetland farmers shows clearly that an innovator with entrepreneurial skills can have a major impact in terms of facilitating the adoption of a technical innovation which give farmers the opportunities to diversify and access new markets locally and at a distance. However, the extent and ways in which farmers diversify their enterprises is highly dependent on personal goals and characteristics, as well as specific local circumstances, such as access to the road and the presence of a group of innovative and non risk-averse people with contacts in distant markets.

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Feminization of farming in the Himalayas – Are women to become the new farm managers or just exhausted agricultural laborers?

Sarah Nischalke[1]

Abstract **- Globalization has reached even the remotest places in the Hindu Kush Himalayanmountains and encourages migration, so that especially the young productive males leave the farms. Migration is not new to this region, but it currently happens to an unknown extent and to a rising number of destinations. It is boosted by the economic upturn in urban centers, e.g. in the Gulf countries and South East Asia. 15% of the worldwide 200 million laborers come from HKH countries and many of them from mountain regions in India, Nepal and Pakistan (Banerjee et al. 2011). Traditionally, women and men, both are majorly involved in agriculture in the Himalayas and respectively shape the way farming is done there. They choose the crops that are planted, the livestock that are kept and also decide on system transformations and innovations, whether to try out new rice varieties (Central Nepal), introducing locally rare vegetables such as long beans or spinach (Assam) or growing medicinal herbs for sale (Yunnan). The examples primarily used here are Nepal and Assam/India, where traditionally men take care of field crops and large ruminants, whereas women are responsible for horticultural crops and poultry, which tend to become more intensified sectors on the farms. Field research in 2012 has also shown that under stress women particularly push alternative economies, encourage share-cropping and labour exchange, sharing of fowl, handicrafts material and work or bartering. However, in many cases women have not gained in regard to power and reductions in labour. Decisions are mostly taken by men and often based on economic considerations only. Hence, the key question of this presentation is how well women and men are able to utilize new opportunities and overcome the challenges and how women farmers can be helped to cope with climate-related environmental changes; for which it is imperative to improve their access to a range of entitlements.**

Keywords **- Feminization of agriculture, Out-migration, Hindu Kush Himalayan region, Risk manager, Livelihoods**

In times of environmental and socioeconomic change, the choice is not only between varieties of crops but between agriculture and off-farm opportunities. Usually men are more mobile and it is culturally more accepted for them to leave the farm. In addition, they have better job opportunities abroad e.g. physically challenging construction work and get higher payments. In case they leave their homecountryor state they are not available anymore even for part-time agriculture. As a consequence spaces of opportunities change for women and men and new challenges arise. The changes in the farming system and local economy expose women to new tasks of disaster, food risk and farm managers, for which they are often unprepared. The traditional labor division requires men to do important parts of the agricultural work, which they, of course, cannot do, when they are absent. These days, in rare cases Nepalese women can be seen ploughing the fields. But this remains the exception. In general labour needs to be hired because it is physically very challenging work and culturally not appropriate to be done by women. Besides that the men's work cannot just be added to the women's workload.Women are already overburdened with household chores, children and labour-intensive agricultural tasks including the collection of wood, water etc., which has become more difficult under climate stress already. Often remittances are not enough to compensate the lack of labour on the farm.

So far, women often have full control over all agricultural productsthat are produced for subsistence such as poultry and home garden cultivars, otherwise mostly men decide on crop cultivation and how income from production is spent.Women do not have the same opportunities as men to access markets, extension services or alternative livelihood options due to restrictions in mobility and cultural constraints. Out-migration of men not only increases the workload of women but also challenges them as farmers and changes regional and national farming systems. And in rather male-dominated farming systems, where women mostly contribute their labour, women need to acquire new knowledge and skills to be able to become farm managers. Currently the trend seen in the region can be rather categorized as feminization of agricultural labour. Few women have full decision-making power over their farms. The research conducted 2012 in Assam and Central Nepal showed that even if households are headed by women and men work outside the country women make phone calls before they take decisions or consult male family members who do not stay on the farms. The key question is how women and men can utilize new opportunities and overcome the challenges and how women farmers can be helped to cope with socio-economic and climate-related environmental changes; for which it is imperative to improve their access to a range of entitlements.

Years of research have shown that agricultural development needs to include gender in order to enable adoption (Ragasa 2012), in case the women run the farms it is even more pivotal.Women need to learn more about breeds, application of fertilizer, agro-chemical inputs or alternatively the preparation of organic fertilizer/compost, handling of water pumps and tractors (also conditions for hiring), tending cattle and handling financial issues such as taking credits. They do not only need to be able to access weather and price data but also the knowledge and networks to make use of such information. As indicated above, the smallholder farms are too labour-intensive so that

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women cannot just take over the workload of men but need to develop their own (new)priorities, acquire (new) technologies and come up with a new household labour management, which will in the long run restructure the overall farming system.

Especially the development of new agricultural development approaches such as climate-smart agriculture provide the chance to integrate gender aspects better and consider women'slabour burden. The farming system should be restructured, and that should be considered in any intervention, in a way that women benefit economically, nutritionally and with regard to their well-being. Women's long term thinking and investment will differ from men's. It is widely known that women tend to take wiser investment decisions considering the nutrition, health and education of their children,so there is a chance for a re-orientation of the farming system towards a more nutrition-sensitive agriculture with a stronger focus on vegetables, fruits, medicinal herbs and small livestock, which needs institutional support, so that positive outcomes for the women as farm managers and communities can materialize. Hopefully, this support can also thwart the trend that out-migration and feminization of agriculture results in devaluing farming in South Asia. The society perceives it more and more "socially demeaning occupation" (Hoermann et al. 2010)due to the poor education, hard physical labour and a low standard of living of farmers.

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Women Empowerment in Agricultural Extension, Victoria, Laguna, Philippines

Sofia Joy G. Quillope and Nelita M. Lalican[1]

***Abstract* – Accessibility of rural women to agri-cultural knowledge and technologies is in-creasing and this trend can bring about food security for the country. The study focused on the selected Cybervillage sites to know signs and evidence of women empowerment, specifically in Victoria, Laguna. Statistics from PhilRice and International Rice Research Institute where obtained. Usage of women of Rice Crop Manager andPinoy Rice Knowledge Bank by downloading files, than men was observed. Popularly downloaded files include crop establishment, rice varieties and seed selection. Cybervillage project gave women chance to exercise their skills and capabilities to bring about change in the community. Their role in different agri-related activities is important for the country to attain food security.Through frequently accessing ICT tools and attending trainings, it enables them to do extension services on their own communities.**

***Keywords* – agricultural extension, ICT, women empowerment**

INTRODUCTION

Information and Communication Technologies (ICTs) have helped agricultural stakeholders gain access to recent information and technologies. Problems in the field can be addressed more quickly and solutions are implemented in the right time and place (Belden et.al., 2011). One of the current project of International Rice Research Intitute entitled"Improving Knowledge Exchange and Decision Making among Rice Stakeholders through ICT-based Technology Promotion and Delivery Systems" commonly known as the Cybervillage project aims to make use of ICT as a tool to relay new ways and technologies in rice farming. The project was implemented in 8 pilot sites nationwide and it inludes towns of Batac-Ilocos Norte, Apalit-Pampanga, Kabacan-North Cotabato and Dingle and Oton-Iloilo.

ICT tools showcased in the Cybervillage project includes the Pinoy Rice Knowledge Bank, also known as the Pinoy RKB and can be accessed through the Internet which consists updated information and technologies in rice farming.Rice Crop Manager (RCM)is also a tool which provides location-specific fertilizer recommendations to the farmers based on their cropping practices, farming situation and needs.

With women comprising about 43 up to 70% of the agricultural labor force in the developing countries, the use of ICT towards rural women empowerment is deemed important. Knowing their major specific roles in agriculture can create a clearer picture on what aspects in the rural women sector should be given more attention (FAO, 2011).

METHODOLOGY

The author spent internship on the National Programs Relation (NPR) unit of the IRRI from 15 April 2014 to 23 May 2014 and conduct the study in Victoria, Laguna on June 2014. Data was gathered through key informant interview. The interview gathers thepersonal and basic farm information ofVictoria farmers. They were also asked the kinds of training they have received and the extension services they have rendered.

Secondary data were obtained to determine ways and extent of women participation in the ICT-based Technology Promotion and Delivery System of the Cybervillage project and provide evidence to signs of rural women empowerment. Data was based onthe other two project sites, Apalit, Pampanga and Infanta, Quezon. Thedata includes annual reports, accomplishment reports and year-end reports prepared by IRRI-NPR. Attendance sheets from trainings conducted during the implementation of the project were also used to know what kind of trainings women have actually attend and how many are actually attending.

Statistics from the Philippine Statistics Authority (PSA) and cropmanager.irri.org/statistics were used to know the gender disaggregation on the access to technology by farmers. Interview with Philippine Rice Research Institute (PhilRice) and Agricultural Training Institute (ATI) staffs was done to know the Pinoy RKB usage by each region in the Philippines and what kind of stakeholders have actually accessed the ICT tool. Interpretation of results includes ratio and proportion, frequencies and percentages.

RESULTS AND DISCUSSIONS

According to the 2013 Gender Labor and Employment Statistics of PSA, the total agricultural labor force in the country have reached to 27.36% in 2013 with 19.79% of it being male and 7.57% are female. According to the FAO-UN (2005), women's role in crop production, livestock raising, agricultural entrepreneurship and marketing are important to the success of agriculture in the country.

Extent of ICT tools Usage

Figure 1 shows that the over-all use of the RCM application in the Philippines is higher for men than women. From the 8 Cybervillage sites, the number of recommendations received by male and female farmers was taken from the time of its release, 6November 2013 up to 30 June 2014. Compared toother sites, Region 6 and 11 where some Cybervillage sites was established shows an increased usage by women of the application. Women in these areas are relatively more aware of the said application and used it more occasionally compare to other Cybervillage sites.

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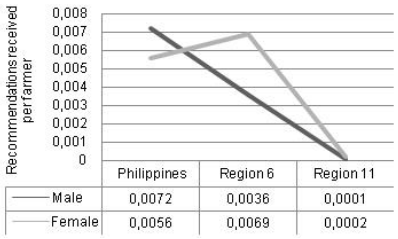

Figure 1. Number of Rice Crop Manager Recommendations Received by Farmers

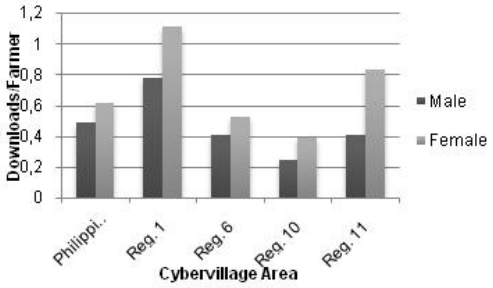

Figure 2. Number of Pinoy Rice Knowledge Bank Downloads by Gender

Figure 2 shows the number of files downloaded by different users of the Pinoy Rice Knowledge Bank on the different regions in the Philippines. The data covered from the number of downloads done from the period of December 2012 to May 2014. Overall, women have downloaded more PowerPoint files from the tool than men. As such, some regions in the Philippines where the Cybervillage sites were established have also an increased number of female users than men and that includes Batac-IlocosNorte in Region 1, Dingle and Oton-Iloilo in Region 6 and Banay-banay-Davao Oriental in Region 11. According to PhilRice, majority of the people who download Pinoy RKB files are farmers followed by agricultural technicians and researchers. Some students, professionals, agricultural engineers and infomediary assistant were also observed to download files from the tool. The most common topic downloaded by the users are about rice facts and figures, variety and seed selection andgrowth stages of rice plant. As such, the top videos downloaded are the ones about Palay Key Check 1 (Variety and Seed Selection, Key Check 2 (Land Preparation) and Key Check 4 (Crop Establishment).

Cybervillage Implementation in Victoria, Laguna

ICT training, Nutrient Manager (NM) training and Information Dissemination activites which is line on the Cybervillage implementation was attended by women. The said trainings were conducted from 2011 to 2013 and lasted for a day. Some women were trained to become seed growers through SHIP and showed interest to share knowledge they learned with co-farmers. In order to use the knowledge learned from SHIP, IRRI gave women foundation seeds to cultivate. A farmer's tour was held at IRRI which discussed lectures on community seedbankingand rice pests and diseases and attended by 9 women out of 40 including 8 farmers and 1 AT.

From the study conducted in Victoria during June 2014, it was found that the role of women in the farm includes decision-making on financial budget and management of hired labor. Specifically, one womansaid that she personally purchasespesticides for farm usage.Another women farmer who owns a computer shop shared the benefits of using the Pinoy RKB with her co-farmers. Women also attendtrainings outside Victoria to which one of them personally goes to Sta. Rosa, Sta. Cruz, Los Baños and Calauan to attend seminars that tackles issues on GMOs, green revolution, and climate change. She learned and encouraged farmers to plant hybrid varieties to increase their yield.

CONCLUSIONS

Women's participation to the various activities in Cybervillageprovides signs of women empowerment. It gave them chance to exercise their skills and capabilities to bring about change in the community. Their role in the farm's financial and labor management, crop production and information sharing should be taken in consideration by the government and several institutions if they want to attain food security for the country. Contributions to doesn't necessarily mean to be from women farmers but includes women from local research and government institutions too. Moreover, their access to the various ICT tools showcased in the Cybervillage is also increasing.If only more and more women will be given access to several knowledge and technologies, they can be able to develop strategies towards increasing farm productivity and income. Also, the problem with extension services not being reached by very far-flung areas can be solved if women will be given more opportunities to gain knowledge. Their drive to learn new things and willingness to share what they have learned makes them have potential to do extension services on their own local comumunities.

ACKNOWLEDGEMENT

Special thanks to IRRI and Phil Rice for sharing their data and information on PRKB and Cybervillage project. Also, my deepest gratitude to my loved ones and friends for being there for me always and to all those whom I failed to mention.

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WG6 - Transition approaches

Rurality, agriculture, and urbanization, are part of diverse realities around the world and within countries. One should differentiate specific situations, with different characteristics depending on territorial conditions and development standards, among others. The related concerns are in consequence different and diverse.

From a transition perspective, the conference theme is challenging in different ways:

First, it challenges scientists and practitioners to understand the changes on different scale levels (after Geels, 2002). Could transition theory enable us to analyse the changes from a multi-level perspective? What pressures the urbanisation and the developments in agriculture and food systems? What is going on at the institutional level? What is enabling or hindering the mainstream agriculture and food systems to anticipate urbanisation? Regarding local initiatives, what examples of niche-experiments can be identified that impact the prevalent regime? Case studies and conceptual reflections on past or ongoing developments could help us dealing with this challenge. We also invite contributions about transitions in the mainstream agriculture and food systems, to enable a better understanding of the relations with urbanisation, local food systems, multifunctional agriculture.

A second challenge: could the transition perspective advance initiatives in reconnecting agriculture and food chains to societal needs? This requires intervention strategies that are both conceptually sound and practically proven. Besides the transition domain, network theories and concepts could also be helpful to support initiatives to work on a successful (re)connection between actors from agriculture, food chain and society.

A third challenge: from an actors centered perspective we could ask Who decides for the rural development? And for the urbanizing areas? Why is it so? Which institutions are in charge of the policy decisions and implementations? How do they contribute to improve opportunities for development? Do local actors participate in the main decisions for rural and agricultural development? Let ‘s consider changes from: 1) a dichotomic urban-rural approach to a complementary, interdependent rural/urban, 2) rurality as subsidiary of urban biased decisions, to rural communities as acting agents of change development and decision makers of their own related concerns, and 3) from urban predominant policy targets to rural communities like strategic partners.

We especially invite contributions showing a connection between transition & innovation theory and the practical level of innovation initiatives and projects.

Contributions addressing the following questions are welcome:

a. *Which transition and innovation concepts and theories could enable a better understanding of the dynamics of agricultural, rural and urban transition processes on different levels of analysis?*
b. *Can we understand the challenges for the mainstream agriculture and food systems from the perspective of urbanisation? What regime changes are necessary and which intervention strategies are effective or promising in changing the regime?*
c. *What operational approaches and tools for policy, business and innovation initiatives reconnect agriculture, food systems and societal needs? Which processes will be needed to engage on long term commitments and short term imperatives? What capabilities are needed?*

Both, conceptual and case-oriented contributions from different countries are called for.

Convenors:

Pieter de Wolf, PPO, Wageningen UR Emiel Wubben, Wageningen UR, The Netherlands
Myriam Sánchez M, Corporación Biotec, Colombia

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Dynamics of transitions: differentiated analysis and interventions for different institutional frameworks

Myriam Sánchez M (Corporación Biotec)[1]

***Abstract* - Colombian indicators for rural areas (Ocampo 2014, Olarte 2015) compared to urban ones, illustrate a case for analysis and understanding of the "complex dynamics of societal change". According to different studies and experiences, agriculture, a key activity in rural areas in Colombia, demands a technological transition to become a strategic factor of change. Different innovation environments, condition the patterns and mechanisms in technological transition processes in rural areas. Institutional frameworks are clear differentiators for these processes in developing countries (Sanchez 2015). It can be observed that public policies, as orientation for public and private planning of investments, are missing or are not strong enough to support a transition process in these cases. A multi-level perspective (Geel 2010) appears convenient to put together related aspects for alignment towards a socio technical transition, mainly when agents coordination is not evident. Not many examples of implementation of systems of innovation in Colombia, and/or studies of them are in place. A field of research is open in this subject. To build a framework for this research needs to clearly differentiate the contexts of existing references in other countries and circumstances. This paper aims to call the attention to some differences and similarities to be taken into account within common approaches of socio-technical transition processes, for different innovation environments, to contribute to differentiate analysis and interventions. It could be useful to analyse cases in EU countries, regulated through common, well-known agreements, compared to latino-american cases, with different conditions, regulation and innovation systems. The institutional framework is not the only difference, but is probably one of the most relevant for interventions in an actors oriented approach. A compared analysis of dynamics of transitions in rural areas for different innovation environments could result from the cases to be studied in the WG6 AGURB2015, to motivate research on the subject, in other non-EU countries and regions.**

***Keywords* - Rural areas in Colombia, dynamics of transitions, innovation environments, institutional frameworks. differentiated sociotechnical transitions.**

INTRODUCTION

Indicators of quality of life in rural areas in Colombia show a wide gap, compared to similar indicators for urban areas in the country (Ocampo 2014, Olarte, 2015). According to different studies and experiences, agriculture, a key activity in rural areas in Colombia, demands a technological transition, to become a strategic factor of change. It appears necessary to consider a socio-technical innovation (Geel 2010) to reach the goals of development in a long-term transition process.

Not many cases of implementation of systems of innovation are reported in the country, though theoretical statements and policies are formulated (Colciencias 2009). Corporacion Biotec[2] has lead some processes of construction of systems of innovation in regional level for the BIO sector: Bio innovation regional system at Valle del Cauca, Colombia-SRIB (for the Spanish words), and, in a local level, Agrópolis del Norte, an agricultural area of small farmers in Valle del Cauca, Colombia, both in the framework of the Bioregion strategy formulated in the Departamento del Valle del Cauca, in the western region of Colombia. Some "lessons learned" from these experiences are proposed for discussion.

In this context, this paper aims to call the attention on some differences and similarities to be taken into account within common approaches of socio-technical transition processes for different innovation environments, to contribute to differentiate analysis and interventions.

THE RURAL SITUATION IN COLOMBIA

Colombia is recognized as one of the potential global breadbasket countries (IDB 2014), based on its agricultural diversity. To effectively take this opportunity, decisions need to be made to shift from a raw materials economy to a competitive, sustainable and inclusive knowledge based bio-economy. In this context, the Colombian National Science, Technology and Innovation System (SNCTI for the Spanish words), has identified needs for improvement, mainly to coordinate the different agents and interests in the system, to face the most pressing challenges to contribute to the development of the country (OCDE 2013). At the regional level, the situation is still more demanding, taking into account, among others, new sources for funding STI, coming from the STI Royalties System (SGR for the Spanish words) that offers 10% of the national royalties to finance STI proposals, decided at the regional level. This situation for a sustainable development of the rural areas has to take into account the gaps of quality of life in the present situation, for the rural population, as compared to the urban areas, according to general indicators of multidimensional poverty, as shown in Table No. 1.

Important recent studies, as the Mision Rural (Ocampo 2014) analyze this situation as a key problem in the country.

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[2] Corporación Biotec (CB), is a regional research and innovation Center of the Colombian STI national system, in the Valle del Cauca region, since 1995, private nonprofit organization, headquartered at the International Center for Tropical Agriculture (CIAT for the Spanish words), through a special partnership agreement.

TOWARDS REGIONAL AND LOCAL SYSTEMS OF INNOVATION

CB has promoted the strategy Bioregion Valle del Cauca. As an operational tool within this initiative, Corporación Biotec leads since 2010, the process Biotech Regional Innovation System for the agriculture, the agrobusiness and the bio-industry (SRIB for the Spanish words) in Valle del Cauca, with public and private participation.

This process has collectively focused in four main fields for research and innovation to contribute to coordinate efforts from the diverse actors within the regional STI BIO sector within the purpose of "agriculture reconversion for a better living" (CB 2012), considering that an innovation culture and favorable innovation ecosystem are keys to a regional competitive and sustainable bioeconomy development. From an empirical analysis of these cases, some observations can be drawn:

- The decision-making in Colombia, for STI (science, technology and innovation) continues to be centralized at the national level, with theoretical attempts to regionalize it.
- There is not effective alignment within the STI system among the different institutions involved.
- Technological transitions are often proposed as isolated efforts.
- An integrated multi-level perspective appears to be imperative for change and sustainability.
- Two main changes seem to be needed in the agricultural small farmers sector: a technological reconversion for a better living, and a local decision making, for sustainable development based on the agro biodiversity and other territorial ressources.
- Recognition of natural ressources and biodiversity as "capitals" is a key factor for change at the local level.
- Not many studies and research are in place in the country on this subject of technological and socio tchnical transitions.
- A field of research for a better understanding and intervention, on systems of innovation and socio-technical transition processes is open in Colombia

DISCUSSION

Common approaches of socio-technical transition processes for different innovation environments require different frameworks for analysis and interventions. The institutional framework is key within these analyses.

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Table No 1 From Olarte V., 2015. The imperative need of transformation of the Colombian countryside (La necesidad imperiosa de transformar el campo colombiano) **Multidimensional poverty indicators - 2013. Disperse population/Concentrated population**

Indicadores de Pobreza Multidimensional 2013: Población Dispersa versus Población en Cabeceras Municipales

Categoria	Privación	Población Dispersa	Población en Cabeceras	Diferencia en puntos porcentuales (pp)
Condiciones de trabajo	**Trabajo informal**	**92,2**	**74,2**	**18,0**
	Desempleo de larga duración	8,3	10,1	**-1,8**
Condiciones educativa	**Bajo logro educativo**	**83,4**	**42,8**	**40,6**
	Rezago escolar	**39,8**	**29,5**	**10,3**
	Analfabetismo	25,0	8,0	**17,0**
	Inasistencia escolar	7,3	2,8	**4,5**
Condiciones de vivienda	**Sin acceso a fuentes de agua mejorada**	**40,2**	**3,2**	**37,0**
	Inadecuada eliminación de excretas	**26,8**	**7,6**	**19,2**
	Material inadecuado de pisos	18,4	2,3	**16,1**
	Hacinamiento crítico	11,9	12,5	**-0,6**
	Material inadecuado de paredes exteriores	2,2	2,1	**0,1**
Condiciones de servicios de salud	**Sin seguro de salud**	**14,5**	**17,8**	**-3,3**
	Barreras de acceso a servicios de salud	8,5	6,8	**1,7**
Condiciones de niñez	Barreras a servicios de cuidado de la primera infancia	8,8	10,0	**-1,2**
	Trabajo infantil	6,7	2,7	**4,0**

Fuente: DANE, cálculos con base en la Encuesta de Calidad de Vida (ECV) 2012 y 2013.

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Transition: enhancing collective action over diverse stakeholder communities

Pieter de Wolf, Emiel Wubben and Karel de Greef[1]

***Abstract* – The re-connection of agriculture and urban society includes the challenge of re-connecting diverse stakeholder communities to new technologies and/or new ways of collaboration. A Dutch research project developed a framework, based on different transition and network theories, to reflect and intervene on this process. This is especially useful for partners, like research and consultancy, who are involved in innovation processes as a project manager or process facilitator.**

The framework is built on the communication systems theory of Luhmann, after van Assche et al (2012). This theory describes society as a collection of interacting social systems. Additionally, the concept of boundary work (Clark et al, 2011) describes the process between such distinct networks or stakeholder communities towards collective action. This also links to stakeholder management theory (Freeman, 2010) and Ties theory (Granovetter, 1973), that reflect on the composition of the stakeholder network and the interests of the stakeholders. The multi-level perspective (Geels, 2011) and strategic niche management (Schot and Geels, 2008) concepts analyse the wider context from a transition perspective.

The framework was applied on several case studies from biobased economy, urban agriculture and sustainable food chains, in which collective action of various stakeholders was developed. In these cases, the framework showed its relevance, offering various plausible explanations for the success of collective stakeholder action, from different theoretical view-points. Moreover, the framework was also a starting point for intervention strategies of project managers to enhance collective stakeholder action.

***Keywords* – stakeholder processes, innovation, collective action, urban agriculture, biobased economy, sustainable food chains**

INTRODUCTION

In the domain of agriculture, food and biobased, innovation projects are often dominated by a technological approach. Problems are described as technical problems and solutions are engineered or designed. Such an approach often neglects the fact that innovation is as much a stakeholder process as a process of technology development and implementation. However, the technology-driven approach often ends up in nice designs and concepts, without any concrete implementation in practice.

Therefore, Wageningen UR initiated a project on non-technological aspects of innovation processes. This project brought together innovation brokers in the domains of conventional and urban agriculture, food and biobased economy. Their projects were used as case studies for the project and they all brought in some theoretical viewpoints from the innovation and transition domain. The main challenge of the project was to operationalise the theoretical viewpoints in a reflection and intervention framework for project managers. When thinking about the re-connection of agriculture and urban society, this framework could be quite relevant.

THEORETICAL FRAMEWORK

Starting from the point that different stakeholders join in a shared effort, the project searched for theoretical perspectives to describe differences between stakeholders and if possible, how to deal with these differences from a project/process perpective. The first framework is the fundamental viewpoint of Niklas Luhmann (after van Assche et al, 2012), who perceives society as a collection of interacting social systems. These systems are systems of communication: they share a perception on the outside world, related to their nature (as a network, organisation or societal function).

Additionally, Freeman (2010) describes the individual stakeholder as a person with a vested interest in the outcome of an activity/process. This is a more commonly used frame in innovation processes, to reveal different positions of stakeholders towards the innovation. Additionally, Freeman (2010) offer a stakeholder management framework to deal with different stakeholders and let them join and even lead the innovation process.

This closely links up with the boundary work theory of Clark et al (2011): this theory describes the processes between distinct stakeholder networks towards collective action. The role of specific actions on the boundary between stakeholders is specified in this paper (e.g. shared agenda-setting and learning, production of so-called boundary objects).

The ties theory of Granovetter (1973) specifically focuses on the composition of stakeholder networks and the impact on innovation. Strong ties between stakeholders contribute to implementation, but trusted weak ties are relevant transmitting new tacit information.

Elements of boundary work and ties theory also link to the concept of Strategic Niche Management (Schot and Geels, 2008). This concept describes how novelties can develop into mainstream through a careful management of the innovation process. The last part of the framework is about the environment of the innovation itself: the Multilevel perspective of Geels (2011) is helpful to understand that the context (on landscape, regime or niche level) also determines stakeholder behaviour and collective action.

This framework was used to analyse several case studies: 1. Sustainable pig husbandry systems, 2. algae production test site, 3. Urban agriculture, 4. Regional synergy park development, 5. delivery of CO2 from power plants to greenhouses.

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RESULTS

If innovation projects struggle with stakeholder cooperation, the framework offers several questions for reflection and analysis. First of all, successful collective stakeholder action in innovation processes is depending on three criteria:

a. *an enhancing context*, driving stakeholders into innovative pathways, such as biobased economy and urban agriculture. Moreover, a changing context also affects interests of stakeholders and could change their position.

b. *the composition of the network* should show common interests across stakeholders to ensure commitment to the common objective, and a combination of strong and trusted weak ties to combine renewal and realisation.

c. *the process management* should organise a shared agenda setting, the production of boundary objects and should respect the stakeholders in their different roles, positions and interests.

Through these criteria, the framework makes the stakeholder process in innovation projects much more explicit. It also shows that successful collective stakeholder action is not fully manageable, but also requires the right (enhancing) context. However, the case studies also show that the role of the project management in organising the stakeholder process could be improved trough using the reflection and intervention tools offered by the framework.

DISCUSSION

The main challenge of the project was to operationalise the theoretical viewpoints in a reflection and intervention framework for project managers. This proved to be quite successful, as showed in the case studies and in a workshop with project managers. The framework supports the understanding of the stakeholder process and shows that it is partly manageable and partly depending on the enhancing context. Moreover, the framework offers some practical perspectives and tools for project managers, such as the stakeholder management and the construction of boundary objects.

When thinking about the re-connection of agriculture and urban society, this framework could be quite relevant. It could be valuable to reflect on the stakeholder process in existing projects, from the viewpoint of the three criteria from the framework. Secondly, it could offer a good starting point for new initiatives, defining the requirements for the enhancing context, network and process management.

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Chilean Agricultural Entrepreneurs and Free Trade Agreeements (FTA)

Octavio Avendaño y María Cristina Escudero[1]

***Abstract* – This research analyzes business leaders attitudes towards free trade agreements signed by Chile since 1990. Many of the treaties deal with traditional agriculture, which meant to attempt renovations on business and productive practices. Reactions accentuated pre existing differences between the different categories of business in the agricultural area and those who benefited from protectionist policies. As a main hypothesis, it is sustained that across time these differences remained, despite some attempts to gather them in agreement.**
***Keywords* – Entrepreneurs, Agriculture, Chile**

INTRODUCTION

Since the early 90s, several governmental programs had been delivered in order to insert the Chilean economy within the international markets through signing several FTA. Chile has reached 23 trade agreements with MERCOSUR, Canada, USA, European Union, among others. The treaties signed by the country generated a variety of entrepreneurial reactions, ranging from support to a categorical rejection. Despite the abovementioned, there are several types of shades and mix responses, depending the many vested interests existing in the agricultural sectors.

Agriculture business leaders had lobbied and pressured several resources in order to rally authorities and protect their sector interests. As it happened previously in Chilean history, those more hurt by FTA and other commerce agreements had been those producing more traditional goods, or in traditional agricultural activities. Among that traditional production, it can be included wheat, rice and dairy producers. In fact, during the 90s Agriculture business leaders lost gradually their influence, those same representing groups and guilds that were able to trounce government decisions in previous historical periods (Campero, 1984; Montero, 1997). The only exception, to the lesser influence, had been medium size producers organizations were able to put some pressure, since their produce are among the most affected to the international commerce opening and the import of agriculture good on a lower price.

BACKGROUND

From early independence until way into the 20th century, landowners were gathered as part of the National Society of Agriculture (SNA in Spanish). The SNA was able to increasingly pressure and influence governments, especially in terms of their area's particular policies. In fact, as an organization, they went from a particular vested interest group to an actor with political means and ends.

One of the main critical junctures in the SNA history can be related to the landowner's opposition to the agrarian reform produced between 1964 and 1973, which affected those properties that were greater than 200 acres. Before the 60s, there was couple of critical junctures to consider. First, and some year before, some big and medium size landowners left the SNA, arguing the need to strengthen cooperation among those who where exclusively in the agricultural production. Because of the schism produced, the Southern Agricultural Consortium was founded (CAS in Spanish). The second juncture was the economic and market freeing promoted by the Military Junta in the mid 70s, meaning negative consequences for traditional producers in the center-south of the country. The military received open criticism from CAS and other regional landowners organizations (Campero, 1984; Montero, 1997).

The worst moment for producers came with the financial and economic crisis of 1982. The impact over the sector was immense. In fact, the SNA that before the crisis supported structural reforms, finished supporting CAS and others similar to them. Because of the SNA opposition, the regime generated policies towards the protection of traditional landowners through price bands mechanisms. However, tensions flourished later again because of FTAs and other international openings in the following decades.

THE CALLS FOR PROTECTIONISM SINCE 1990

For landowners and agriculture businesses, the most complex crisis since democratic restoration in 1990 was produced in Linares and Cauquenes. During 1992 the international market and the lack of internal demand were hurting rice producers. The tension arose enough to have several demonstrations in the streets against the Economic and Political authorities of the country. In response to the demands, the government established some buying capacities from the State, in order to provide some cash flows to the producers. Also, the Ministries of Health and Education purchased some stock. The effect did not alter the agricultural policies already in place and never embraced any form of protectionism.

Later, the main conflict with landowners came in 1995, when center-south producers rejected the agreements reached with Mercosur. By that time, the SNA supported the producer's demands, especially the CAS. The main demonstration was held in San Carlos (southern Chile) in July of 1995. Within the rally, the President of SNA sustained that the reason of demonstration were subsidies received by producers in the countries of the imported products entering Chile.

Also, several protests were assembled against FTAs, also requesting more tariffs for imported goods. These aforementioned were a repeated feature in the

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country from 1996 to 2000. First, they were demanding protection for grains, meat and other similar producers. Later they were demanding for greater price bands mechanisms. At the end, CAS and SNA merged. The President of the former became the Vice-President of the latter.

BUSINESSMEN AND THE FTAS

Acknowledging the constant rejection of those belonging to CAS, the position of the SNA evolver across time in regards to FTAs. In fact, the latter organization was critical again against the FTA with Canada in 1996, but they were more favorable to the one signed in 2002 with the European Union. The definitive turning point of the SNA came with the unwavering support of the treaty with the United States (2003), and later with China in 2005.

The signing of the treaty with the EU, USA and China was conceived by the SNA as a great opportunity to expand their markets and trade oriented to exports. Within the organization, relevant was the interests of the forestry, winery and the fruit industry. The support of the SNA to the FTA with the European Union, meant since 2002 several tensions and conflicts with remaining members of CAS. At the end the merge of both organizations failed and the latter left the former. In fact, for the SNA leaders all policies implemented by the Concertacion governments were similar to those implemented in the mid 70s (Scapini, 2006: 50). Similar criticisms would rise again in 2006.

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The social construction of space in urban agriculture

Johanna Metzler[1]

***Abstract* – This research deals with the demonstration garden Karls Garten in Vienna. Its main goal is to spread the idea of urban agriculture. The city shouldn't only be perceived as centre of culture, but as a centre of food production too. This also implies a rethinking of the city and questioning the dominant agricultural system. So one of the main research questions was if Karls Garten has the potential to create awareness about the relationship between cities and agriculture. To achieve this goal the garden was the best medium to relate the crop plant with the topics of the functioning of agriculture and cities. However, at the Karls Garten's beginning its place was just an undefined space, a meadow which hadn't any use except looking nice. The research described in the following text recorded the transformation from a meadow to a multifunctional garden. To look at this process from a scientific point of you, the qualitative data of this research has been connected to Henri Lefèbvre's theory regarding the social construction of space. In this theory Lefèbvre also connects the social construction of space with the development of the city, especially in the industrial nations.**

***Keywords* – demonstration garden, Vienna, qualitative data, agricultural system, perception of cities, Henri Lefèbvre, social construction of space**

INTRODUCTION

This research deals with the demonstration garden Karls Garten which was founded at the beginning of 2014. It is located in the inner city of Vienna, so that many different groups of people could be attracted by the demonstration garden. However, Karls Garten is a time limited project till the end of 2018 because the city of Vienna didn't allow renting the place for a longer time period. Still there is the goal to create so much awareness about urban agriculture in Vienna that the city may extend the permission renting the place.

To implement this project the association Karls Garten was founded which consists of four members. These already had some experience in urban agriculture, most of them in community gardens in Austria, but also in demonstration gardens in Brazil. Although there was some experience regarding urban agriculture the implementation of the demonstration garden turned out to be a big challenge, especially in Vienna. In consequence there was a big difference between the primary formulated goals and the presentation of the Karls Garten in the end.

The reason why Karls Garten is very important for the urban agriculture in Vienna is that it is the first demonstration garden. It is also one of the few urban agricultural projects which wants to address the whole population of Vienna. Besides, the urban agricultural movement is very young in comparison to other European countries (Anger et al., 2012).

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That's why there is only little research and most is settled on a micro-perspective. To make one step further the researcher tried to realise a meso level in looking at the influence of Karls Garten on the citizen's perception of city and agriculture.

THE SOCIAL CONSTRUCTION OF SPACE

As mentioned before the development of the demonstration garden was analysed through Henri Lefèbvre's theory about the social construction of space. This theory was chosen because the research time overlapped with the first months of the project. According to that the researcher had the possibility to document the change from a simple meadow to a multifunctional place. This transformation of space is an important part in Lefèbvre's theory (Lefèbvre, 1991). He argues that every space is constructed by humans. This space is precondition as well as output of social structures and every action has an impact on construction of space. In practice action changes the idea behind a certain place which could be also connected to a socialised role of space. The goal of Karls Garten is to use this function of space and point out to the problematic relationship between city and agriculture. Also Lefèbvre emphasises that the dominant agricultural system today is an output of the cities' exploitation regarding the country side.

The beginning of this exploitation could be equated with the starting point of political economy and had been legitimated with a specific construction of space. As a result the political economy's construction of space tried to banish agriculture as an important part of the city.

METHODS AND METHODOLOGY

Before referring to the specific methods itself, it should be mentioned that the researcher was also part of the project during the months of research. Therefore it has to be reflected that the researcher had to roles regarding the demonstration garden. At the one hand there was the role of the researcher, in the other hand the role of a volunteer. The duties of the volunteer were to build up some installations and to look after the plants. So there was no possibility to influence the goal of Karls Garten.

Because in the beginning the development of the demonstration garden was quite unpredictable, the researcher chose the Grounded Theory as instrument of analysis. It has the advantage to gain the possibility to develop the research question by exploring the research field first (Breuer, 2009). That's why at the beginning of the research observations in the Karls Garten and conversations with the garden's visitors were the main part of the starting data collection.

Out of this first data set research questions developed and informal interviews with other visitors took place. There were also two interviews with members of the association Karls Garten as well as observations at Karl Garten's events. According to the

Grounded Theory categories were generated and related to the theory of the social construction of space.

RESULTS

At first it is important to point out that Karls Garten was able to attract different groups of people. However, some groups were especially underrepresented; for instance migrants. The main reason probably is the language barrier. All signs in the garden which contained basic information about the project were only written in german. Keeping in mind that the association was only funded by a few sponsors the low investment in material is unavailable consequence. This and other problems regarding the presentation of Karls Garten are an expression of a lack of the city's support.

The city of Vienna even changed the conditions for the demonstration garden after it had been started. As a result the association lost a lot of time and crucial parts of the projects weren't implemented. One example is the guided tour through the garden.

The original idea was to develop a basic concept for the guided tour and to adapt it to the age and background of the people who wanted to attend it. However, there was only little time to create a concept and the guided tours weren't advertised. Another result of this lose of time was that some of the visitors got suspicious because some of the plants in the garden didn't grow well.

The only possibility to get more attention in the public had been the Karls Garten's events. Nevertheless the association Karls Garten didn't take the chance to spread its idea of a city in which urban agriculture is the basis of city life. At the events the visitors could buy and eat organic food, but there was no awareness raising about the problems of the current agricultural system. The signs in the demonstration garden, already mentioned above, only included little information about the project. So that's why most visitors who were interested in the project had known the concept of urban agriculture before or were even already engage in urban agricultural project.

To conclude the demonstration garden didn't reached its goal. In some cases people said that they wanted to start planting vegetables in the city too. However, the people's wish wasn't to change their perspective on agriculture, they just look at planting vegetables as a kind of leisure activity.

INTERPRETATION

To sum up it is important to point out that the hindrance to fulfil Karls Garten's goals can be located in the city's guidelines for implementing the demonstration garden. One possible reason is the high amount of green space at the outskirt of the city which created Vienna's image of a green city. However, this green city only includes parks in the inner city. Therefore the networking and the organisation of the urban agricultural movement still need some improvement to claim for more rights of urban agriculture.

ACKNOWLEDGEMENT

I would like to thank the association Karls Garten for giving me the opportunity to undertake this research and especially to the association's members who agreed on being interviewed. I also want to thank the Karls Garten's visitors whom had been the main source of my data collection and encouraged me in further engaging in urban agriculture.

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Importance of action labs to transform the agri-food system towards sustainability

M. Hubeau, F. Marchand[1]

***Abstract* – The agri-food system is increasingly under pressure due to demographic, economic and environmental changes. Moreover, internal trends such as consolidation and private standards also affect the system. As a result, the agri-food system is urged to make a transition towards sustainability. Many sustainabilityexperimentsarise to respond to these trends. An important aspect to facilitate this transformation is to gain insight inthese experiments. We define them as action labs as they are practice-oriented andin an experimental phase. The aim of this paper is to explore the process of collaboration within theseaction labsand with the mainstream agri-food system. We analyse four case studies to analyse how action labs could contribute to the sustainability challenges of the mainstream agri-food system. The results highlight 13 key factors of collaboration and link the performance of the experimental initiativeswith the structure of the actor network and interaction to the agri-food system. Our research contributes to enhancing scientific knowledge on the role of collaboration in the transformation of agri-food systems.**

***Keywords* – action labs, transformation, collaboration**

INTRODUCTION

The attention to sustainable agri-food systems increased during the last decades. Nowadays it is a core element at societal and political level. Theagri-food system is urged to transform towards sustainability. Pushed by the need to transform, new and promisinginitiatives arise (Renting et al., 2003). Also in Flanders, the chain actors recognize the urge and therefore, aim to transform towards sustainability. Specifically, the Flemish agri-food system is export oriented, consist mostly out of small and medium enterprises and is encouraged to transform to address global and local challenges. Moreover, Flanders is a small region with a high urbanization rate and a dense population rate with an average of 462 inhabitants per km² in 2010(Statbel, 2015).

This paper aims to gain insights from action labs, which we define as experimental initiatives which are new and practice-oriented food networks aiming to transform the system towards sustainability. Action labs are alternative food networks, comprise of different chain sectors, focus on incremental or radical innovations and address alternative products, processes, chain organization or markets.

In literature, little is known about the specific role of collaboration in the context of sustainability transitions (Schiefer et al., 2015).Furthermore, although food production systems are complex and strongly interconnected, most research concentrates on onlyonesector, such as agriculture (e.g. Zhou et al., 2013) or food industry (e.g. Notarnicola et al., 2012).

Therefore, this paper focuses on collaboration as a necessary element to facilitate a transformation and to ensure economic and social sustainability of the agri-food system. Using insights from a case study analysis of four action labs, we identify the key factors of collaboration and evaluate the performance of a whole chain configuration to investigate if further gains can be achieved when different sectors set up new collaborations.

The remainder of this paper is organised as follows: section two describes the used methodology, section three embodies the results, and section four discusses the results and concludes.

METHODOLOGY

To identify the key factors of collaboration of the action labs, a case study analysis was performed. Both collaboration within the action lab and collaboration between the action lab and the larger agri-food system are considered. We selected four action labs based on the following criteria: (i) comprising a whole supply chain, (ii) transformative power, (iii) having sustainable development as a goal, and (iv) Flemish region (Table 1).

All network actors of the action labs were interviewed and a learning workshop was organised for each action lab. In total, 22 semi-structured interviews were performed. The list of questions covered different themes: (i) motivation and role of actors, (ii) factors of collaboration, (iii) relationships and interaction, and (iv) lessons learned.

Table 1. Description of the four action labs

Title	*Short description*
Shop, pick, drive and deliver	A short chain initiative to set up direct home delivery of fresh and processed farm products
Sustainable social catering	Transition towards sustainability of social catering in a hospital
Valorisation of surpluses	The valorisation of biological surpluses into a new marketable product
Soybeans in the food system	Production, processing and consumption of Belgian soybeans in the agri-food chain for both food and feed

PRELIMINARY RESULTS

The analysis of the interviews resulted in the identification ofkey factors of collaboration (Table 2). A distinction can be made between factors regarding network activities and relationships between actors.

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Table 2. Identified key factors of collaboration

Activities	*Description*
Coordination & control	To integrate activities & responsibilities to ensure performance& monitoring
Ownership	Allocation of the responsibility of specific activities to (a) (group of) actor(s)
Task decomposability	How the different tasks can be allocated to different actors
Risk sharing	Distribution of the cost and consequences of risk among several actors
Level of transparency	The extent to which actors have access to information and data of other actors
Expertise	The skill or knowledge of a specific actor about a specific subject
Expected output & outcome	Description of the expectations of the actors of the output & outcomes
Relationships	*Description*
Identity of partner	The relevance of the identity of the partner in the choice of the partner
Length of relationship	How long the partners know each other or each other's organisation
Level of trust	The level of confidence in the integrity, ability or strength of a partner
Mutual benefits	How the gained value of the action lab is divided between all actors
Mutual learning	The learning between actors of technical, organizational & process aspects
Motivation	Commitment of actors to the project & their role to attain a common goal

The evaluation of the action labs is described by the actor network structure, performance, link to the agri-food system and future prospects (Table 3).

Table 3. Evaluation of action labs

Title	*Actor network*	*Perfor mance*	*Interaction food system*	*Future prospects*
Shop, pick, drive & delivery	Small[a], Diverse, SR[b] medium	-	+	-
Sustainable social catering	Medium, Diverse, SR strong	+	±	+
Valorisation of surpluses	Small, Diverse, SR weak	-	±	-
Soybeans in the food system	Medium, Diverse, SR strong	+	+	+

[a]*Small (<5 actors), Medium (5-15 actors).*
[b]*SR = internal social relationships of actors.*

The actor network structure is defined by its size, range, variation and strength of social relations. The performance describes how the action labs functions in accordance with the predefined targets. The interaction to the mainstream agri-food system shows the strength of the link to the actors of the agri-food system and the future prospects refers to the continuation and maintenance of the sustainability initiatives and perceived upscaling possibilities.

DISCUSSION AND CONCLUSION

Based on the preliminary results, we gained meaningful insights from the action labs. Firstly, we were able to identify 13 key factors of collaboration and divide these factors into activities and relationships. The actors highlighted these factors as important criteria to select partners and as a prediction of a good performance of the action labs. These factors of collaboration are confirmed in a wide range of literature on institutional organisation of supply chains (e.g.Schiefer et al., 2013).

Secondly, to ensure continuation of the sustainability initiatives, the overall performance and the structure of the actor network are the most important factors. The link with the interaction with the mainstream agri-food system was less profound. Actor networks with a large variety of actors and with strong social relationships had a better performance and more future prospects.

Thirdly, positive evaluation by the actors of activity characteristics of collaboration are directly linked to the performance while evaluation of the relationshipcharacteristics are more linked to the future prospects and satisfaction of collaboration. Moreover, the actors mentioned the learning process as an important benefit of participation in sustainability networks. Learning was associated with socio-technical aspects, sustainability and collaboration between chain actors.

Also, transition literature specifies the role of small and promising initiatives to accelerate a transition towards sustainability (Ingram et al., 2015). Collaboration, and more specific, interpersonal relationships between the actors are an important factor of the establishment, continuation and upscaling of action labs. Finally, this research contributed to enhancing knowledge on the role of collaboration in the transformation of agri-food systems.

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Regional Open Innovation Roadmapping (ROIR) - Application and evaluation of a participatory approach that integrates stakeholders into the development of regional innovations

Kathrin Specht[1,2], Felix Zoll[2], Rosemarie Siebert[1]

***Abstract* – This paper reports on the testing and evaluation of an operational approach that brings together different stakeholder groups to jointly develop strategies for the future implementation of regional innovations (see Specht et al. 2016).* The approach was designed and first applied by Schwerdtner et al. (2010), who called it Regional Open Innovation Roadmapping (ROIR). It integrates "open innovation" elements in technology roadmapping (TRM) in the context of sustainable regional development. We adapted the method and applied it to the case of introducing innovative types of building- related urban agriculture (UA) to the City of Berlin. Those possible innovative types might include the installation of rooftop gardens, rooftop greenhouses, edible green walls as well as such innovative forms as indoor farms or vertical greenhouses. In order to define sustainable options for zero-acreage farming (ZFarming), the ROIR approach was applied between 2011 and 2013. An evaluation of the participatory process in 2014 revealed that the chosen approach could increase the potential for ZFarming in terms of a) knowledge generation, b) new stakeholder network establishment, c) new project implementation, and d) improved general perception of ZFarming.**

***Keywords* – ZFarming, urban innovation, Berlin**

ZERO ACREAGE FARMING AS AN URBAN INNOVATION

In general, urban agriculture (UA) has been recognized as a possible way to improve cities' capacities to adapt to climate change and to strengthen their resilience and self-reliance.

As a specific visionary subtype of urban agriculture, 'Zero-acreage farming' (ZFarming) is considered as an idea in the context of sustainable urban development. ZFarming includes all types of food production characterized by the non-use of farmland or open space, thereby differentiating building-integrated forms of urban agriculture from agricultural production "on the ground". Types of ZFarming production include rooftop gardens, rooftop greenhouses (RTGs), edible green walls and additional innovative forms such as indoor farms or vertical greenhouses (Specht et al., 2014). The major benefit of these forms compared toUA in parks, gardens or urban wastelands is based on opportunities to link the food production with urban buildings and to exploit the possible synergies that derive from that combination (Freisinger et al. 2015; Sanyé-Mengual et al. 2015). Existing projects can mainly be found in large cities in North America and Asia (Thomaier et al., 2015).

"REGIONAL OPEN INNOVATION ROADMAPPING"– BACKGROUND AND APPLICATION

The ROIR approach is an instrument for participatory decision-making that aims at introducing innovations to a specific region. Based on the elaborations of Schwerdtner et al. (2015), the ROIR approach is characterized by the integration of elements from 'Technology Road Mapping' (TRM) (Phaal et al. 2004) into 'open innovation' (Chesbrough, 2011). ROIR benefits from cooperating with various stakeholdersgroupsthat might be of relevance at any stage of the innovation procedure, from initial development to market introduction (Schwerdtner et al. 2010; 2015). For our application of ROIR, Berlin (the capital of Germany) was chosen. The aim was to find possible farming models for ZFarming in the Berlin metropolitan area and to identify the options available for their sustainable implementation (Specht et al., 2015; Specht & Siebert, 2014). The ROIR approach for Zfarming was applied between 2011 and 2013 and evaluated in 2014.In our specific case, the ROIR process was divided into four main phases.

1.)The relevant stakeholder groups were identified and38 stakeholders were interviewed to define the relevant key issues for further exploration (Specht et al., 2015).

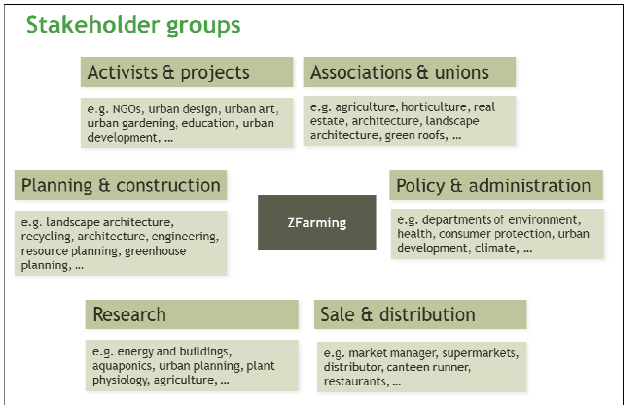

Figure 1.Map of stakeholders (from Specht et al. 2015)

2.Selection of the specific innovation: the participants chose to focus on rooftop greenhouses (RTGs) as the most promising type of ZFarming for Berlin.

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3. Development of the innovation concept: the innovation of RTGs were examined in detail.
4. Roadmap for the implementation of ZFarming: The stakeholder networkcalled 'ZFarm - urban agriculture of the future' (www.zfarm.de) jointly created guidelines to enable the government, politicians, citizens and future operators to address RTGs in Berlin (Freisinger et al., 2015).

THE ROIR APPROACH – EVALUATION METHOD

An online survey was sent out to the entire group of participants at the end of the participatory process in 2014 via e-mail (March 2014). The survey investigated the following effects of the ROIR approach in terms of

i. knowledge generation and exchange
ii. establishing new stakeholder networks and cooperation
iii. implementation of new projects
iv. the general perception of ZFarming

Altogether, 31 out of 58 persons completed the survey, which corresponds to a response rate of 53%.

EVALUATION RESULTS AND DISCUSSION

In terms of (i) knowledge generation, the survey results shows that participation in the ROIR workshops contributed to increase stakeholders' knowledge about ZFarming.Establishing new collaborations and networks among the participants is a major aim of the approach. Our analysis revealed that the ROIR process in fact facilitated (ii) the establishment of new cooperation and interdisciplinary networks. Regarding (iii) the implementation of new projects, the results showed that almost half of the respondents were involved in a practical ZFarming project and thatthe stakeholders became more engaged with ZFarming by participating in the ZFarm project.Furthermore, the ROIR process (iv) contributed to improving the general perception of the positive potential of ZFarming.The following features were particularily appreciated by the stakeholders:

- Establishing new collaboration
- Inspiration through "interdisciplinary thinking"
- Exchanging interdisciplinary knowledge
- Gaining an overview of ZFarming
- The positive atmosphere during the workshops
- Gaining knowledge for ones daily work
- Taking part in the development of an innovation
- Co-creating the RTG manual
- Contributing to something valuable for the future development of Berlin

Similar to what has been described by Schwerdtner et al. (2015) for the previous application of the ROIR approach, the process stimulated the establishment of new networks and alliances, contributed to knowledge generation, and created a common understanding for the future implementation of ZFarming among the stakeholders.

CONCLUSION

The ROIR contributed to increase the potential for introducing the innovation of ZFarming to the city of Berlin both in terms of knowledge dissemination and practical reference.We found that the ROIR approach was useful as a planning tool for the joint introduction of regional innovations and that the positive impact of ROIR was perceptible and identifiable.

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Animal welfare driven systems innovation in the pork chain

Karel H. de Greef, Pieter L. de Wolf[1]

***Abstract* – An innovation project targeting at reframing and improving animal welfare was re-analysed against the background of four theoretical frameworks on collaboration among stakeholder groups. Theories and guidelines from 1) Stakeholder management, 2) Boundary work, 3) Social Systems and 4) Ties theory were projected on the Pigs in Comfort Class initiative. Key conclusion from the analysis is that the specific combination of stakeholders (having 'weak ties'), the joint target / product (their joint 'boundary objects') and the creation of clear cut small initiatives (practical farmers testing in 'niches') provided a context where non-conventional research results were readily accepted and used for practical initiatives and farmers adoption.**
***Keywords* – Systems innovation; Animal welfare; stakeholder participation.**

INTRODUCTION

The welfare of production animals is a key issue in the societal debate concerning Dutch agriculture. From about the year 2000, the Dutch government made the choice to explicitly stimulate systems innovation in animal production chains. The aim was to structurally overcome shortfalls in sustainability of production systems. This implied support of a series of projects in which long term ambitions were combined with interactivity and stakeholder participation. After a description of the used innovation methodology (the RIO-approach), a casus of an early RIO-project on pig welfare will be introduced. This casus is analysed (in hindsight) against 4 theo-retical notions.

RIO – A SYSTEMS INNOVATION APPROACH

Systems innovation requires changes in both structure, culture and technology. The Wageningen approach in this is conduction of projects in close collaboration with stakeholder representatives, combining analysis, design and interaction. The approach comprises a structured series of stakeholder analyses, systems analyses and systems design, targeting new/niche or radically improved production systems. Project activities are performed in the midst of the stakeholder context, either interactive or with strong participation of actors from chain, government and NGO's. Based on its three key features, the approach is labeled as RIO – Reflexive Interactive Design (Bos et al. 2012). Formally stated, RIO is an approach for *doing* reflexive modernisation (Bos & Grin 2008). Generally, RIO-projects are coordinated by scientists of Wageningen UR, guided by profes-sional process facilitators.

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THE CASE 'PIGS IN COMFORT CLASS'

The major Dutch Farmers organisation ('LTO') and the major Dutch animal welfare NGO ('Dierenbescherming') jointly adopted a welfare approach ('meet the needs of animals') and made a strategic arrangement to jointly work on this in a multi-year project: 'Pigs in Comfort Class' (2003-2009). Together, they built a test facility for pigs which fully met this welfare concept and used it for three years for research and demonstrations purposes. They combined this with active presence in the media and small pilots in 6 commercial farms. (De Greef et al, 2011). The welfare approach was devel-oped earlier (2001-2003) in an interdisciplinary project in which scientists and the NGO combined future images ('toekomstbeelden') and radical ambitions ('systems innovation') into innovative systems designs. This preceding phase resulted in a widely understood and adopted definition of animal welfare: 'meeting the needs of animals'. The role of Wageningen UR and its scientists in both the preceding phase and in the Comfort Class phase was twofold: animal science and innovation science was delivered and the stakeholder process was guided with process expertise.

ANALYSIS

As a casus study, this early RIO-project Pigs in Comfort Class (2001-2009) targeting reframing and improving animal welfare, was re-analysed against the background of four theoretical frameworks on collaboration among stakeholder groups. Theories and guidelines from 1) Stakeholder management (Freeman, 1984, 2010); 2) Boundary work (Gieryn, 1983, Clark, 2011); 3) Social systems theory (Luhmann, 1984)and 4) the Ties theory (Granovetter, 1973) were projected on the Comfort Class initiative.

1. STAKEHOLDER MANAGEMENT

Evaluation: The key issue in Freeman's Stakeholder management approach is organisation of planned activities to involve stakeholders to a joint project/process. The successive activities around Pigs in Comfort Class were part of a systems innovation program in which involvement of stakeholders, use of interdisciplinary methods, deliberate transfer of project ownership away from the research organisation etc. were part of the applied methodology. Especially leaving / bringing ownerships with the stakeholders and active design of process steps was later evaluated as a success factor. The formal routine of Stakeholder management as described by Freeman (1984, 2010) was not followed, but in hindsight, the applied process steps show considerable resemblance with it.
implication: Deliberate addition of stakeholder directed process activities facilitates collective action. Availability of knowledge workers having time and expertise lifts the science-stakeholder interaction towards a transparent and planned activity.

2A. BOUNDARY WORK

evaluation: The Comfort Class initiative is a clear example of boundary work. Various sources and targets of knowledge played a role.The key aspect of the knowledge related boundary work was use of the scientists to exchange the knowledge activities (research, communication, testing) between the target groups, with the anchor people from the LTO and Dierenbescherming in the lead. It was safe for these parties to frame their joint activities as 'using joint research to evaluate their joint idea'.
Implication: deliberate creation of safe (external) working space for the (historically seen) opposing parties is effective. Especially addition of boundary objects creates collective ownership.

2B. BOUNDARY OBJECTS

evaluation: The two organisations realised that their collaboration could be notable / impactful. They formulated a project in between (and especially relatively apart) from both organisations. Wageningen UR was subsequently invited** to participate in the project. In the early phase, the foreseen joint project acted as the boundary object, lateron, the experimental facility (the test stable) took this role. *[**by the partners for animals science& budget; by the Ministry for systems innovation & process help]*.
implication: Addition of boundary objects helps in giving the parties a joint ambition that can easily be communicated. Not in the least towards the own grassroots to explain/defend the cooperation with a 'stranger' or 'opponent'.

3. SOCIAL SYSTEMS / COMMUNICATION SYSTEMS

evaluation: The key issue in Luhmann's Social systems (or Communication systems) theory is the fact that groups forming their own communities each have their own frames of reference and languages. Which causes distance and possible misunderstanding. The different interpretation of the term Animal Welfare illustrates this. The scientists spoke and understood both the farmers language and the NGO-language with respect to animal welfare. This was used in the adopted joint welfare view, understood and accepted by the representants of both 'communities': it fitted in both the frames of reference of the farmers representatives and of the NGO representatives.
Implication: the development of a joint language was useful in identifying& taking up joint opportunities (based on a shared view) by the stakeholder groups, albeit that actual collective behaviour depended at least as much on the realisation of a joint working space and boundary object.

4. STRONG TIES - WEAK TIES

evaluation: The key issue in the Ties theory (Granovetter) is the theorem that innovation is maximised in the interaction between parties having (trusted) weak ties. Originating from their back ground LTO and Dierenbescherming were opposing parties, having weak ties. In the years before the strategic collaboration, LTO and Dierenbescherming were in the phase of meeting annually to discuss farm animal welfare issues in a closed and safe environment. In this way, trust arose. This paved the way to jointly take up a collective activity when the opportunity arose.
implication: Non-natural parties (weak ties) taking up a joint ambition after gaining some trust proved to be a base for success. Innovation work or joint research can bring parties together and enhance mutual understanding and trust.

CONCLUSION & IMPLICATION

The RIO-work demonstrated that combining 'classical' animal science activities with stakeholder involvement in a well planned innovation program is effective. The RIO-approach provided scientists with an infrastructure and set of tools to combine process and expertise within a real life innovation context.
Key conclusion from the analysis is that the specific combination of stakeholders (having 'weak ties'), the joint product (their joint 'boundary object') and the creation of clear cut small initiatives (practical farmers testing in 'niches') provided a context where non-conventional research activities were effective. This implies an advice to involve non-natural parties in well-designedactivities that aim at systems innovation / regime shift.

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Transition pathways in participatory plant breeding programs: a farm-level network analysis

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***Abstract* – According to the literature on regime transition, niches are sources of innovation that may lead to the transformation of the dominant regime, if processes at other level of the system – the landscape and the mainstream regime - are supportive (Loorbach & Rotmans, 2006). A focus on actors involved in the transition process and the analysis of their specific role in knowledge networks can help assessing the robustness of a specific niche and its growth potential (Hoogma et al. 2002). Knowledge systems, and in particular the dynamics of local and expert knowledge, have in fact a key role in innovation models. Different trajectories characterize the transition process, leading to different results: from co-optation and gain in efficiency of the mainstream regime to its radical transformation. Our assumption is that leading actors in the farms' knowledge networks will influence a specific transition trajectory, shaping its direction and transformative potential.**

***Keywords* – Transition theory, Social Network Analysis Farm level analysis, Knowledge Networks, Participatory data collection**

INTRODUCTION

The capacity of an individual firm to develop innovation is strictly linked to its participation to local, national and international networks at institutional or civil society levels. The actor network theory developed in the 80s by Callon and Latour claims that power relations in society shape local context and local power relations determine the context. The potential to contribute in the process of scaling up from niche to regime of individual actors and practices can be related to the network of relationships in which individual actors are embedded. When considering scaling up, though, the growth in size of the network is not sufficient. The continuous tension and dialogue between networks of individual actors of niches and regimes define the way the translation from niche to regime can be developed. The visualization of an actor through the network of his relationships can contribute to understand the actor position in its trajectory from niche to regime. In addition, the analysis of the role of different actors in the individual actor network can give information about the possibility to develop a learning process allowing to transform the regime.

This work examines how the structure of the relational network influences the trajectory of individual farmers. It integrates transition theory with actor network theory and ego network analysis to conduct an in-depth case study analysis.

METHODS

We utilize tools drawn from Social Network Analysis to investigate the knowledge networks of six innovative organic farms involved in participatory plant breeding programs in Italy, Portugal and France. The farmers and their relational networks are the unit of analysis.

The focus is on farmers' perception of their relational networks as the research goal is to understand how the surrounding environment influences farmers' behaviors in term of innovation strategy. Relational data were collected integrating personal network research design defined by Borgatti (2009) with participatory mapping exercise. The main name interrelated question has been to define the actors the farmers exchange knowledge with. The name interpreter question included 8 attributes, we will focus here on two of them: the one related to the multilevel perspective of transition theory and the one related to the role of actors in contributing to the functioning of the farming system.

Finally, betweenness centrality measurements have been used to identify who are the actors in key position in each farmer knowledge network. Three main trajectories were identified on the basis of the analysis of farms' knowledge networks, and the position of each farm was analyzed taking into account the dynamic nature of the transition process.

RESULTS

The first interesting result of this work is the different perception of the interviewed farmer of who are the actors that directly contribute to the functioning of the system.

This perception range from the idea that the only internal actor is the farmer itself (Fig.1), (and sometime his family), to the idea that all the actors exchanging knowledge with the farmer itself have an internal role in the farming system (Fig.2-4). In a case (Fig.3) the farmer includes the consumers and the short food supply chain market channels in the direct functioning of his farming system.

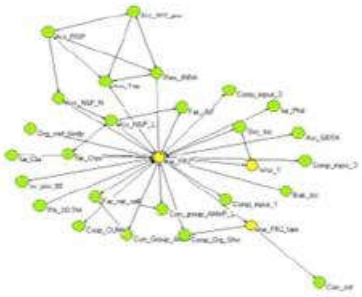

Fig. 1- knowledge network of farmer FR1 with internal and external actors

Case studies of this work represent niche actors, as they are innovative farmers directly involved in EU research projects. Most of them have both niche and regime actors in their networks, giving an indication of their involvment in the continuous dialogue between niche

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and regime. However, often regime actors are researchers working in public institution. This indicates a low direct exchange of some niche actors with regime ones. At the same time, one case study has only regime actors in his network: this underline how dialogue between organic farmers in the regime and the organic root based movement can be completely absent, avoiding the transfer of value and principles of organic farmers.

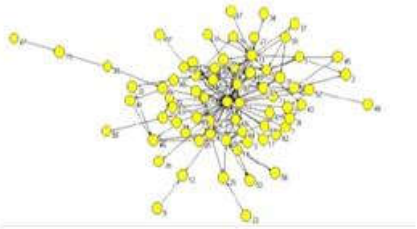

Fig. 2 - knowledge network of farmer IT1 with internal and external

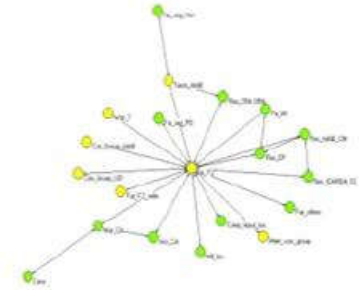

Fig. 3 - knowledge network of farmer IT2 with internal and external actors

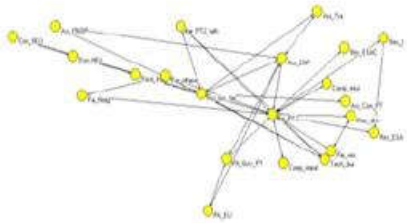

Fig. 4 - knowledge network of farmer PT2 with internal and external actors

Looking at key actors in farmers' knowledge networks the type of actors with higher value of betweenness centrality in the six farmers knowledge network range from organic no certified farmers to researchers and technicians, to consumers and farmers unions. Farmers with different actors in key position of their knowledge networks are likely to follow different trajectories in innovation development. The static analysis of the ego networks of the six case studies has been integrated with the dynamic analysis of micro transition at farm level with the aim of understanding individual trajectories. Three possible trajectories resulted from the analysis of the six farmers: value driven, quality driven, policy driven. Each trajectory has a different vision of innovation and plant breeding experiment at farm level that results in a different potential to contribute in the process of scale up from niche to regime.

Value driven farmers have an enthusiastic approach to radical innovations, however on farm trials are one of the highly diversified activities of their farm and often their management is researcher driven. This type of farmers have an high flexibility in experimenting novelties due to their low attention to external rules, however their farming system have a unique equilibrium strongly based on personal motivation. They have a high potential in developing novelties but a low potential to influence the landscape and stabilize niches. Value driven farmers represent break trajectories with mainstream regime.

Quality driven farmers follow the agroecology paradigm of innovation, based on strong consideration of existing knowledge. These farmers have the capacity to involve other farmers in their innovation process to share traditional knowledge. The presence of breeding trials on the farm is integrated in a collective process of innovation development, where different actors co-create knowledge to increase the quality of their production. The structure of their knowledge network encourage the stabilization of niches and have a large potential to scale up and influence the decision making process as best practices. Other experiences take inspiration from those farmers and they have the possibility to contribute in the reconfiguration of the system.

Finally, policy driven farmers follows the dominant innovation paradigm (KBBE) and works with a gradual introduction of incremental innovation in their farming system. Investments in research and innovation aim at reducing the use of chemicals as required by the EU policies. They could catch up innovation from niches and adapt them to the regime, developing symbiotic trajectories with the dominant regime.

CONCLUSIONS

Innovative farmers have a twofold role in knowledge management: they should increase density of their network to develop shared meanings but they should also look at external knowledge to encourage the learning process. The focus on the relational aspect and the analysis of farmers' knowledge network allowed to understand the direction of their transition pathways. The study of actors' structure in the farmers' ego networks and the use of participatory approach in data collection gave interesting information to identify the logic underpinning farmers' decisionmaking process. In urban areas, where social relations are more complex and dense, the application of this approach could give interesting results to better understand the relation between agriculture and urban actors. Further research can be developed to improve the methodology used in this work, however it already give an indication on how micro economic studies could be integrated with the analysis of knowledge networks to better understand individual decision making process.

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WG7 - Regional branding and local agrifood systems: strategies, governance, and impacts

Regional branding initiatives are more and more spread as a mean for reconnecting agrifood products to places and, by this way, for creating value in rural areas. Regional branding encompasses several types of initiatives, ranging from very formal ones – such as geographical indications protected under EU quality policy schemes (PDOs and PGIs) – to umbrella strategies where links between products and place are very weak. Regional branding initiatives differ in many respects, in particular as regards degree of formalization, governance and institutional arrangements, role of farmers, existence of written rules and of control systems, geographical scale of the initiative (from very localized initiatives to big regions), strength of the connection with local resources.

Regional branding initiatives are expected to support the development of local agrifood systems and to exert positive impacts on rural development, both directly (income, employment) and indirectly (activation of other local economic activities like tourism). However so far little has been done to evaluate and compare the many types of impacts, which depend inter alia on the type and design of the regional brand, the level of use by firms, the collective initiatives aiming at linking producers and consumers. The few available studies show a scattered and uneven picture. For this reason this working group aims at sharing empirical evidences, thoughts and methodologies on the economic, social, agronomical and environmental effects of regional branding, with a special focus on the resilience of local agri-food production systems, multifunctional agriculture, and rural areas.

Contributions are welcome on the following topics:

- *Critical issues in the setting process of regional brands, role of different initiators and of local public actors, governance issues*
- *Comparisons between different types of regional branding initiatives, also from a juridical point of view: protected GIs, collective geographical trademarks, umbrella hallmarks, other quality labels*
- *Institutional arrangements and public policies supporting regional branding dynamics and their integration with tourism*
- *Methodologies of evaluation of the effects at firm, supply-chain, and rural area level*
- *Economic effects of regional branding for firms, local supply chains and rural areas; social effects (employment, social cohesion, collective action, gender issues …); socio-technical effects (local knowledge for food elaboration, recovering of the local recipes …); environmental effects (support to multifunctional agriculture, management of specific local resources, agro-biodiversity preservation …).*
- *Consumers' willingness-to-pay for products bearing regional brands*
- *Regional branding and short/alternative food supply chains*
- *Regional branding in HORECA circuits and in public food procurement systems*

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The branding process as opportunity to trigger integrated strategies for rural development: the experimentation of "Paesaggi italiani - ITEM" in northeast Italy

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***Abstract* – This paper intends to explore how a branding process can contribute to the building of both territorial identity and local development's strategies, unlocking distinctive potentials and resources of rural areas. The focus will be put on the branding project "Paesaggi italiani - ITEM", which concerns three Local Action Groups' sites in northeast Italy, between the two regions of Veneto and Friuli Venezia-Giulia. Starting from these pilot areas, the project aims to be developed ona wider network of italian rural areas. The valorisation of the rural landscape through communication and marketing actions should encourage sustainable, slow-type forms of rural tourism, in order to promote typical products together with the cultural and natural heritage. The brand is supposed not only to express the landscape's values and qualities, but also to communicate the experiential dimension of its fruition. Deeply related to the restructuring of agricultural practices, the brand should also contribute to open new perspective for rural development, as well as for rural management schemes.**

***Keywords* – rural landscape, experiential tourism, local development.**

INTRODUCTION

The role of regional branding in the new patterns of rural development has been explored by a wideliterature, also moving on the background of the quality turn, the post-productivetransition and the multifunctional shift of agriculture. Branding initiatives has been mainly focused on the valorisation of typical products through marks or labelling schemes (Tregear et al., 2007), or else on the creation ofthematic itineraries linked to economies of scope (Brunori and Rossi, 2000).

An occasion for reframing rural tourism's scenarios could be offered by thecurrent emergence of a new demand forlandscape's fruition. Expressed by tourists and urban dwellers,it is related tothe experiential nature of post-modern consumption, and partially tickled by innovative rural supplies.The valorisation of the rural landscape through branding initiativesseems to promote a more systemic and integrated approach to rural development. Indeed, it reliesin a territorial perspective on the whole complex of environmental, socio-economical and cultural characteristics that distinguish the rural world, and that make thus unique its experiencing, through deep immersions in which all senses are involved.

A better understanding of these topics can be addressed through the case study of the ongoing branding project "Paesaggiitaliani - ITEM" (meaning *Italian Landscapes*, henceforth abbreviated as IL). Grown up within the LEADER approach and included into the Local Development Programmes, it is promoted bya partnership of three Local Action Groups (LAGs) located between the two regions of Veneto and Friuli Venezia Giulia, in northeast Italy: VeGAL, Torre Natisone GAL, and Euroleader. The project aims to develop coordination, communication and marketing strategies, in order to valorise typical products together with the entire cultural and natural heritage, encouraging sustainable forms of rural landscape's experiential tourism.Further, IL aspires to develop its approach and to extend its application on a wider network of rural areas, in order to promote a fourth pole of italian tourism, which should be based on the *rural landscape* (alongside the conventional ones embodied by *city of art*, *coast* and *mountain*).The University Iuav of Venice has been charged with realizing aunitary brand supposed to identify a new kind of territory's fruition, and to vehiculate communicative and informative contents.

METHODOLOGICAL APPROACH

The academic teamworked within an action-research approach, electing constructivist models and qualitative methods.The identification of the rural landscape's values and the possible forms of its fruition, together with the typical eno-gastronomic, cultural and agro-environmental heritage to be valorised and reorganizedat territory level, has been carried overlapping different level of analysis.

In the first place, it has been conducted a generaloverview ofthe emerging agri-cultural geographies, the local assets and the rural management strategies,through the lens of territorial studies.

Then,combining brainstorming techniques and discourse analysis,it has been deepened the landscape's perception among groups of socio-economic actors(such as farms, agritourisms, local tourist offices and other stakeholders) in each LAG's site, by realizing three workshops.In addiction, in order to inquirein-depth the cognitive and operative framework of selected actors, it has been resorted to semi-structured interviews.

Scaling down at film level, one farm has been involved in the experimentation of a tourist package. In parallel, it has been conducted a wider scouting of emergingexperiences regarding rural tourism, for investigating the innovative ways through whichthe evolution of both its demand and supply is addressed.

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THE BRAND BUILDING AND COMMUNICATION

The brand of IL means to express the landscape's multiplicity and complexity through a dynamic and inclusive graphic system, using visual communication's tools to transmit values, images, narratives, and place specificities. The general brand is centred on the four core-concepts of experience, slowness, care, and interaction, symbolized by elements extracted form rural world. The brand presents a high degree of adaptation and customization, due to the possibility of declining it,in whole or in part, at local level. This option allows creating a second layer of representation, in order to conveydistinctive features and peculiar qualities of places, and thence to vehiculate territorial and cultural identities.

Figure 1. Examples of characteristic elements chosen to-decline the brand at local level: the peculiar thatched farm-houses ("Casoni") for oriental plain Veneto; the traditional burning wooden rings ("Las Cidulas") for Torre-Natisone's area; the typical wood-carved masks of Tarcento's carni-val ("Tomâts") for Carnia's district.

Alongside, a "Charter for the Rural Landscape's Tourism" has been elaborated,in order to spread and coordinate alternative forms of eco-friendly tourism, based ontheslow discoveryof the rural landscape. The documentaims to found a conceptual trestlefor a wider network of rural areas willing to participate to the branding-project, by pointing out common values, development scenarios, methods for tourism demand's listening, and strategies of tourism supply's construction and communication.

Finally, a website dedicated to ILis under con-struction, with the double intent of reaching the general public, and ofcreating an open multimedia archive of the collected materials.

CONCLUSIONS

At this early stage of the branding-project, assessing and measuring its effectiveness and outcomes is no achievable. Some preliminary considerations concern the brand-building process and implications.

The involved university assumed a crucial role in setting the brand's creation on an interactive and community-based process,able to trigger social activation and aggregation. So, a first network of actorssupporting the brand itselfand its philosophy has been consolidated at local level.

The landscape has been assumed as an identi-tarian element around which shared values and visions can be aggregated, as well as a strategic device for linking agricultural activities to the various forms of territorial capitals.On the one hand, the brand means to foster and promote socially innovative initiatives at enterprise and territorial level, creating new growth opportunities in the context of multifunctionality and diversification of rural economies. On the other hand, it should provide a common frame for economic, social and policy strategies, reshaping an integrated approach to rural development and catalysing the local capabilities of collaborative visioning, networking and governance.

According to Dominguez Garcia et al. (2013), addressing more sustainable and consistent trajectories of rural development requires changes in the social organisation of places, which can be prompted by branding processes. In this perspective, it becomes crucial to foster the participation of tourists in rural heritage's caring-practices and preserving-strategies.The engagement of institutional actors (both at local and regional level) would be essential for bridging the socio-economical initiatives with a wider policy framework, as well as for enhancing mechanisms of transitional processes' governance.

Finally,some critical key-issues could be related to the levelof involvementandof coordination between actors, besides to the degree of awareness in consumer's mind (Lorenzini, 2011).

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Vetrina Toscana: from regional trade brand to regional umbrella brand

Angela Crescenzi, Raffaele Mannelli[1]

***Abstract* – The regional brand "Vetrina Toscana" was created with the aim to characterize the offer of the structures of the small trade and catering through the enhancement of the local context. The enhancement of the activities of the commercial network involved the use of local quality products and activated relations with consortia of food and wine geographical designation (PDO and PGI), with producers of organic products, with manufacturers branded Agriqualità. Communication campaigns to promote the network Vetrina Toscana has been possible thanks to an agreement among many public and private entities. This brand was born in the commercial sector, but has then changed its goal becoming a means of cross communication in other sectors (agricultural, educational, cultural). This initiative seems a unique case of wide integration of branding in different sectors and therefore deserves attention for its development towards a regional brand umbrella.**

***Keywords* – Vetrina Toscana, Regional Branding, Umbrella brand**

INTRODUCTION

The brand Vetrina Toscana was born over 15 years ago when it was registered as intellectual property of the Tuscany Region with the aim to promote a network of restaurants and food stores (botteghe) offering regional agricultural products and high quality food.

The brand had the objective to identify small commercial enterprises that were building relationships with local producers in order to renew the culture of traditional food and traditional Tuscan cuisine. This project was developed by the Tuscany Region and the Tuscan Union of Chambers of Commerce.

The restaurants of the Vetrina Toscana network promote the best products of Tuscan agriculture, the food short chain, the traditional dishes, rediscovering the link with the regional territory and with the seasonal crops. The Vetrina Toscana food stores support special regional products that represent key elements in their field. In this way Vetrina Toscana has contributed to strengthen an entire commercial sector. Those stores succeed to maintain the culture of traditional products and foods.

As established in the brand specification of Vetrina Toscana, in order to be included in the network, restaurants and shops must have at least 30 products (PDO and PGI food and wines, organic or integrated farming products of the Agriqualità, agricoltural regional brand, regional products included in the national list of Foodstuffs, seasonal products, local mineral water etc.).

Restaurants and shops enroll yearly to the network Vetrina Toscana using the newly renovated website http://www.vetrina.toscana.it. By July 10, 2015, .954 Restaurants and 306 Food shops had joined the network. These 1,260 businesses, located in every area of the region, have established closer links with farmers and other local food producers. Since 2015 also agricultural enterprises can sign up and n.180 companies have already joined the network.

THE CASE OF VETRINA TOSCANA

The case is represented by the change of Vetrina Toscana from a simple mark to an umbrella brand.

Since 2012 Vetrina Toscana has developed a three-year plan of communication for tits promotional activities. For the first time this plan has affected not only trade but also agriculture, tourism, and productive activities.

The promotional activities of the network take place through traditional media channels (TV, radio, newspapers, websites, app, social media, YouTube, e.g.). All the events are collected in a yearly calendar and all of the stakeholders can participate in the planned activities. Each operator can easily interact with other operators' activities.

In the communication activities are included one or few operators of the network (e.g. one chef, one producer) for a better quality of information. Some media are partners of the project and they tend to create specialized sections of their programs to tell the contents of such activities. The interaction of the project with museums, libraries, art exhibitions, events, tastings, keeps alive the mutual interest between the media partner and the project and the initiatives have obtained a great success.

The events have been useful for general local development and have created new economic relationships and innovative consumer-oriented experiences. This approach has contributed to revitalize tuscan traditions, cultural and environmental heritage. The integration of policies from different sectors (trade, agriculture, tourism, business, industry, education, culture and environment) seems achieved but it needs to define an objective evaluation and provide a perspective.

SOME DATA

During the meeting held 1th December 2014 in Florence, was shown a first valuation of promotional activities of three-year plan.

The unity in the planning of communication has achieved remarkable results in terms of qualified citations project in the media. During the period 2012-2014 the media had published 1,025 broadcasts on the radio and 2,122 broadcasts on TV, 1,027 articles in newspapers and 2,187 articles on the web. The results show that the brand Vetrina Toscana is well-known, it is no longer a brand of network of trade but an umbrella brand that promotes places, itineraries,

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events and proposals of gastronomic-cultural tourism for tourists and residents.

In this period, 2012-2014, the communication cost (newspapers, magazines, radio, television) was of € 2 millions, that have generated potential a value of promotion of € 8 millions. The rough estimation of the value of communication activities due to the project was carried out by assigning value to each quotation obtained in the media (newspapers, magazines, radio, television). The results are still under government evaluation but the potential of Vetrina Toscana is remarkable.

VETRINA TOSCANA: A NEW OPPORTUNITY FOR PDO/PGI

It is need to spread positive results of the communication planning among the operators of the project. The producers and their associations, especially of PDO and PGI linked to the network, would have awareness of the potentiality of the brand and take advantage of the project.

In Tuscany, excluding wines, there are 28 protected names already recognized and three are under review by the European Commission. PDO and PGI involve more than 14,000 companies in the region, 66,000 hectares affected, over 1,600 farms enrolled. These protected products have very different dimensions: some have large product volumes, other smaller territories: sub provincial or sub municipal, other associations are well-structured, others are represented by committees promoters not yet evolved into associations or consortiums.

These associations have limited financial and human resources. This weakness could be overcome using communication offered from Vetrina Toscana like umbrella brand. The multi sector project can be the instrument to show the characteristics and the identities of territory, respecting their features and the quality of products.

PDO and PGI have strong local roots and their associations and committees have to make important functions respecting the protection and promotion of the product; in addition to performing a function information on the characteristics of the product to consumers, brokers and media.

In this period of strong communication activities on the project Vetrina Toscana involvement consortiums of PDO and PGI has been increased and their presence has been constant in many initiatives:

- "Vetrina Toscana a tavola", a television programs recorded in the covered markets of San Lorenzo and Sant'Ambrogio in Florence;
- food blogger contest on product and its territory;
- Vetrina Toscana to Sanremo Italian Song Festival;
- Vetrina Toscana for EXPO 2015 in Milan – a series of food and wine events in restaurants dedicated to PDO and PGI reserved for the press in the catering industry.

CONCLUSION

These data show that an umbrella brand would strengthen the communication of policies for different sectors, trade, agriculture, tourism, business, industry, education, culture and environment.

The positive effects of this umbrella brand can be used and developed for the communication also to producers and especially to PDO and PGI consortia because the latter have the opportunity to make a better use of the media activities in order to assert their own brands. This requires an active participation to the event planning.

Signs of greater participation in the communication project developed by Vetrina Toscana are now evident especially from those consortia that have developed, through the media, the knowledge of their products. Thus the Consortia have enhanced the reputation of the PDO and PGI products showing their link to their territory of origin.

It would be appropriate to monitor and evaluate the effects of such regional umbrella brand.

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Multi-scaled, layered agri-food branding

Erin Nelson, Alison Blay-Palmer and Irena Knezevic[1]

***Abstract* – This paper compares and contrasts the creation of and context for 'brands' in Canada and Mexico, using the lenses of local identities, community development, connectivity across rural and urban spaces and governance processes. We draw on two case studies to inform our analysis. Firstly, we look at the Mexican Network of Local Organic Markets and, specifically, its work to implement participatory organic certification systems in its markets across the country. Secondly, we consider the development of the Foodland Ontario™ brand and a number of complementary regional branding projects that identify food produced in Ontario, Canada, or particular regions of that province. Although the cases differ to some extent with respect to scale, the motivations for branding and the governance processes involved, both serve as examples of the flourishing, multilayered, collaborative efforts to rebuild regionalized food systems in the Americas.**
***Keywords* – brands, certification, regional food systems, participation, community development.**

INTRODUCTION

In the face of mounting concerns regarding some of the negative impacts associated with a conventional food system model, a wide range of alternatives has emerged. This trend has included the proliferation of initiatives designed to differentiate products that possess specific alternative characteristics – often related to space and quality (e.g. local, organic, fair trade) – by 'branding' them in some way. The extent to which such initiatives represent a meaningful challenge to conventional agri-food system dynamics depends significantly on the initiative in question and its specific regional context. However, by presenting two different case studies, this paper argues that a variety of branding models can and do represent examples of the flourishing collaborative efforts to rebuild regionalized food systems in the Americas.

In Mexico, the Mexican Network of Local Organic Markets is a civil society organization that represents more than 20 local organic markets across the country. These markets aim to support small- and medium-scale organic producers and increase the accessibility of high quality, organic goods for local consumption. Each one has its own unique, locallyfocused identity; however, collectively, the markets – and the products offered by its producers – are recognized at the national scale by the Network and its logo, which has become a kind of local organic 'brand'. In order to maintain the integrity this brand, the Network and its member markets use participatory guarantee systems (PGS). An alternative to third party organic certification, PGS are locallyfocused quality assurance systems that certify producers based on active participation of stakeholders, and are built on a foundation of trust, social networks, knowledge building and exchange (IFOAM, 2015).

In Canada, Ontario's Foodland Ontario™ brand is a long-standing identifier of food grown within the province's borders. More recently, a number of more locally-focused, regional brands have emerged as another layer of self-identification within the Ontario food system. These newer brands are tied to tourism (e.g. culinary trails linked to art galleries), locality (e.g. 'Buy Local' maps), or one specific food product (e.g. the 'Butter Tart trail' or 'Wine Route') and seek to add value for the food producer and/or processor. While each is somewhat unique, the Foodland Ontario TM brand and its more localized counterparts all place a significant emphasis on regional economic development. Notably, their emergence has been the result of strong collaborations amongst local and provincial governments and private enterprises of various scales.

METHODS

The Mexican case study work presented in this paper is based on research conducted between 2006 and 2011. In particular, there is a focus on the results of 128 surveys and 41 interviews carried out in 2008-2009 with stakeholders involved in the country's local organic movement. The Ontario-based work is drawn from a province-wide scan of models and best practices for local sustainable food systems that was conducted by the Nourishing Ontario research group (nourishingontario.ca) in 2011 and 2012.

RESULTS

The work in both Mexico and Ontario represents, in part, different approaches to capturing and promoting a sense of local or regional identity through food.

In the case of Mexico's local organic markets, as well as the sub-provincial branding schemes in Ontario, the focus is on identities that are geographically bounded at a very local scale. For example, a market initiative in Chapingo actively promotes typically local products such as prickly pear, pulque (an alcohol derived from the maguey plant) and barbacoa (a style of prepared meat), whereas sister markets in Oaxaca offer regional specialties such as tlayudas (a variation on the taco), mezcal (a variation of tequila) and tejate (a drink made with maize and cacao).

Similarly, 'Buy Local, Buy Fresh' maps in Ontario encourage consumers to identify and purchase foods produced at the scale of a particular municipality or county. The Foodland Ontario brand, by comparison, creates a sense of identity based on a geography that covers more than one million square kilometres, and Mexico's Network of Local Organic Markets allows regionally-produced goods to be, to some extent, recognized and marketed at the national scale.

The scale at which a brand is focused has some implications with respect to its ability to foster community development and connectivity across rural and urban spaces. In the case of Mexico's local organic markets, PGS is explicitly designed to support knowledge-sharing and capacity-building, and to cultivate relationships of trust amongst producers and

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consumers (Nelson et al. 2015). As such, it serves a strong community development function and contributes to the building of social capital that links urban localities (where most of the markets and consumers are located) with rural spaces (that are home to many of the participating producers).

Although they may be more directly focused on economic development, many of the sub-regional branding programs in Ontario offer similar opportunities for relationship-building, as consumers are encouraged to purchase directly from local producers. By contrast, larger-scale initiatives such as the Foodland Ontario brand are not designed to foster community development; rather, they are much better-suited to strengthening market demand for the province's food producers.

The extent to which a branding initiative engages in community development is at least partially a function of the stakeholders and governance processes that are involved. The development of Mexico's local organic markets, and their implementation of PGS, has been a primarily grassroots movement driven heavily by small-scale peasant producers, interested citizens, and non-governmental organizations. In more recent years, there has been some engagement on the part of the Mexican state; however, PGS and organizational governance processes have remained grounded in the active participation of civil society. Comparatively, in Ontario both the provincial and regional branding initiatives have had much stronger involvement from government, as well as the private sector. For example, Foodland Ontario is managed by the Ontario Ministry of Agriculture, Food and Rural Affairs. Similarly, many of the province's local branding initiatives have been spearheaded by local governments (often through their local economic development and/or tourism offices) working in collaboration with private sector partners.

DISCUSSION AND CONCLUSIONS

Because they operate at different scales, place differing levels of emphasis on community development, and are driven by different styles of governance, the initiatives discussed in this paper offer unique sets of opportunities and limitations with respect to building alternative food 'brands'.

Perhaps the most conventionally-oriented program is Foodland Ontario, which operates with a very broad definition of 'local' food, focuses much more explicitly on marketing than on communitybuilding, and is organized in a relatively top-down (as opposed to participatory) manner. Although this may limit the degree to which the program challenges the conventional agri-food system model, it offers a number of advantages. Perhaps most importantly, the Foodland label boasts an impressive 94% brand recognition in Ontario (Knezevic et al. 2013). This points to the power inherent in larger-scale initiatives that enjoy strong government support. While the scope of their alternative agenda may be limited, their ability to reach such large segments of the population enables high levels of influence and impact. Layering regionalized branding projects onto Foodland Ontario creates the potential for different kinds of impacts, as the powerful recognition offered by the provincial label is complemented by regionspecific values and attributes, including narrower definitions of 'local' and, in many cases, increased efforts to build relationships across producerconsumer, rural-urban and sectoral boundaries.

In the case of Mexico, the highly participatory nature of PGS and the strong food sovereignty orientation of the local organic markets represents, in some ways, a more radical alternative to the conventional food system model than the Ontario initiatives discussed here. Far beyond an attempt to build differentiated markets, the work aims to shift food system discourse and practice in ways that reaffirm the value of peasant identities and regional food cultures, empower producers and consumers to become more active agents in their own development, and build community resilience (Nelson et al. 2015). Uniting the markets in a national network has allowed for some scaling up of this alternative vision; however, it has certainly not achieved the kind of brand recognition enjoyed by Foodland Ontario.

Both cases presented here demonstrate that building alternative brands to differentiate food products can take a layered approach, involving: complementary work at a variety of geographical scales from local to national; focus on a range of overlapping economic and more community-oriented priorities; and governances processes that vary with respect to participation of different stakeholders. Because each approach offers unique advantages and opportunities, layering them through collaborative multi-scale efforts helps maximize the potential to reconnect producers and consumers, revitalize regional identities, and build more vibrant food cultures.

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A comparison between different types of Regional Branding Initiatives

Janina Wiesmann, Luisa Vogt, Marcus Mergenthaler, Wolf Lorleberg[1]

***Abstract* – Various food scandals have sensitized the public and helped create concernsregardingthe quality of food in recent years. A growing importance of alternative food supply chainsoccur, which shorten the relations between producers and consumers and emphasize secondary benefits in form of information regarding origin and quality. On the basis of expert interviews with several European examples of Regional Branding Initiatives (RBI) a typification can be built based upon the strategic goals of those RBIsand the involved stages of the food supply chain.The example of a joint marketing associationis used to gain a deeper understanding of organizational structures or of marketing strategies, in order to form theses on success factors and bottlenecks.**

***Keywords* – regional or local agricultural products, food supply chains, Regional Branding Initiatives.**

INTRODUCTION

The intensification and modernization of agricultural production have provoked various food scandals in recent years. These developments have sensitized the public andhave created concernsregardingthe quality of food. As a consequence, consumer de¬mand changes with a growing importance of alter¬native food supply chains. In line to this the emergence of an "integrated territorial paradigm" (e.g. Sonnino, Marsden, 2006) can be identified as an alternative to the conventional, modern paradigm of the agro-food business. Characteristics of this paradigm are the shortening of the supply chains between producers and consumers. Also, producer-consumer relations are shortened in the sense of being made more transparent by indicating the origin of food.Additionally, there is also anemphasis on secondary benefits in form of information about the product regarding origin and quality in order to regain trust and to embed food production in easily understandable chains (Renting, Wiskerke, 2010). The variety of these short food supply chains is considerable and can be subsumed under the concept of "Regional Branding Initiatives" (RBI). RBI can be defined as (network activities between) actors, who participate directly in cultivation, processing, marketing and consumption of regional or local agricultural products.

METHODOLOGY

Against this background the use of several examples of various EuropeanRBI allows illustrating some typical development strategies. Expert interviews based on guidelines and contained questions e.g. on context of founding, organizational structures, political support, strategic goals, respective understanding of quality or marketing strategies. Additionally it analyses the impacts the initiatives have on the connection between the characteristics and quality of a territory with the agricultural products.

DIFFERENT TYPES OF REGIONAL BRANDING INITIATIVES

For a deeper understanding, the variety of RBI has to be broken down into categories. Only initiatives with an actor representing it (e.g. a legal person) are included in the typification process. Based upon deductive reasoning, a kind of decision tree has been developed for typification (cp. Fig. 1).

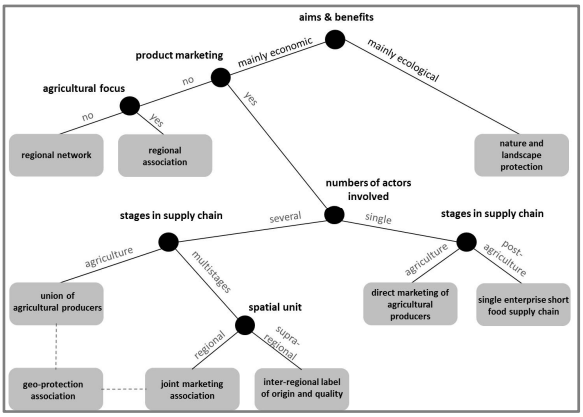

Figure 1. Decision tree for typification of Regional Branding Initiatives (Source: own draft).

Not all types of RBI, however, show the potential to create substantial economic multiplier effects or rather to take effects beyond their own operations. Thus, for further analysis, these types of RBI are included:

Regional Association
A regional association has a strong link to the agro-food sector. It is engaged in network activities and moderating processes throughout the agro-food value chain. Members of the network are farmers, food processing actors and often public actors. It does not typically deal with product marketing.

Union of agricultural producers
The marketing of local food usually based upon face-to-face producer-consumer relations. In contrast to direct marketing of farmers are several primary producers involved and make the strategic decisions.

Joint marketing association
Regional players of different stages of the short food supply chain form the corporative actor and come to

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strategic decisions. They sell their products under a common regional brand based on an externally monitored quality assurance system.

Geo-protection association
The pursue goal is to register a product in one of the three EU schemes that promote and protect agricul¬tural products and foodstuffs with a distinctive geographic origin.Members can either be localized at one single stage of the short food supply chain or at different stages.

Inter-regional label of origin and quality
These are certification systems on federal state or state level, which guarantee certain product qualities with the proof of origin.According to EU regulations this proof of origin has to designed indirect.

EXAMPLE: SUCCESS FACTORS AND BOTTLENECKS OF A JOINT MARKETING ASSOCIATION

Here the type joint marketing association will be presented as one typical example consisting of the following food supply chain: agricultural production – food processing (partly on the own farm) –logistics-/distribution centers –food retail - consumer. The products are mostly processed products and also partly mono products (local food). The special transmitted qualities of the products are proximity, identification and trust, as well as environmental and ethical secondary benefits. The rather informal demarcation covers more than two NUTS 3 regions. The distributional stages of the supply chain, however, include in addition agglo¬merations in relative proximity, distant up to 100 km. As the food shows additional qualities, which are communicated to the consumer through a regional brand in a reliably way, the food can achieve higher prices as compared to conventional food products.
Based upon the results of the expert interviews the following success factors (cp. Tab. 1) and bottlenecks (cp. Tab. 2) can be summarized.

Table 1. Success factors of a joint marketing association

Success factors
• Management level with the following tasks: development of product and process qualities, implementation of an externally monitored quality assurance system, coordination of public relations, price negotiations with the food retail • The funding of the initiative is secured by turnover-based membership fees • Locational advantage: proximity to sales markets like agglomerations with medium to high income population or to tourist destinations • The spatial area of the initiative ensure a proximate processing of the local or regional agricultural food

Table 2. Bottlenecks of a joint marketing association

bottlenecks
• Within the spatial area of the initiative there are no adequate processing facilities, e.g. due to increasing regulatory requirements • The products have to assert themselves in price competition • A secure funding is needed during the start-up- and establishment phase • In case of distribution via the conventional food retail, asymmetric competition- and power relations may have adversely affects

DISCUSSION

Regardless of the different types ofRBI can be specified that a professional working organizational structure with clearly defined levels of decision-making and areas of responsibility (e.g. the develop¬ment of product and process qualities, the implementation of an externally monitored quality assurance system, the coordination of public relations) have a positive effect on the (economic) success of a RBI. Likewise a funding model chosen for the general objectives of the respective RBI contributes to the success. Important is also a transparent and credible communication of the product and process qualities, which guarantee secondary benefits (including freshness, proximity and authenticity) by an externally monitored quality assurance system. Moreover, the respective types of RBI show different success factors (and bottlenecks) of the marketing of regional or local agricultural products. The implementation of the derived success factors and bottlenecks is incumbent upon the respective RBI and should be designed situational and site-specific, based on the working environment.

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Impact of Regional Collective Trademarks on Farms: Japanese Experiences

Junko Kimura, Edi Defrancesco[1]

***Abstract* – This study aims to clarify effects of the Regional Collective Trademarks in Japan. Geographical Indications is finally enforced on June, 2015 in Japan. The country has already other certification systems on agro-food or fishery products, including an origin certification system by local government and Regional Collective Trademarks. The present study focuses on the later and illustrates the effects. Using interpretive approach, the data gathered from thirty eight producers' associations/unions is analysed for understanding how each product has been positively changed after the registration.**

***Keywords* – Regional Collective Trademarks, Regional Brand, Japan Geographical Indications**

INTRODUCTION

In 2006, Regional Collective Trademarks (RCTM) system has been introduced in Japan. Any kinds of products and services, including food products, which are produced in a given region, can apply for RCTM. At present time around 566 products are already registered under umbrella regional brands, 304 of which are agro-food or fishery products (April 2014).

After having briefly described the institutional framework of the Japanese RCTM system managed by Japan Patent Office, this study aims to evaluate the economic and social impacts of RCTM on small scale farms in rural areas, in particular, by focusing on the five major effects.

JAPANESE REGIONAL COLLECTIVE TRADEMARKS

According to Patent Office in Japan, cooperative groups can register product which consists of a region name and a product name for Regional Collective Trademark when a certain degree of reputation has been regionally established. Registration requirements are: 1) eligibility of the group, 2) close link between the name of the region and the product, 3) well-known prior usage by the applicant, and 4) not simply common name of the product.

The trademarks that can be protected under the Japanese Trademark Act as RCTM are those whose names consist of their respective region's names joint to the specific name of the regional products or services.

In the RCTM system, trademarks containing the names of regions, regardless that they are famous or not, can be registered as RCTM under the following two conditions. First, the product or service has close relationship with the region. Second, the product or service has been recognized in a specific geographical area as being used by groups, associations or unions.

When trademarks containing the names of regions are registered as RCTM, the trademark rights become effective throughout Japan. In other words, RCTM rights holders have exclusive rights to use the registered trademarks that are connected to the designated products (online broacher distributed by Japan Patent Office in Ministry of Economy, Trade and Industry).

METHODOLOGY

The analysis is carried out through a case-study approach based on semi-structured interviews to the Director of Ministry of Agriculture, Forestry and Fisheries, and the different actors operating in the RCTM supply-chains. Secondary data on production, effects of RCTM registration, and regional brand management gathered by Japan Patent Office was also used to analyse 38 RCTM products. The producers' groups, associations, or unions interviews explore the: 1) application process, 2) brand management and development after registration, and 3) effects of registration (Japan Patent Office in Ministry of Economy, Trade and Industry, 2008; 2009; 2010; 2011; 2012; 2013; 2015).

RESULTS

According to Japan Patent Office, expected effects of RCTM are: 1) sales and/or price increase, 2) countermeasures against counterfeits, 3) quality preservation and/or improvement, 4) recognition of products and improvement of its image by distributors and/or consumer, and 5) improvement of producers' motivation.

From gathered data of 38 RCTM products, all of the above mentioned positive effects were recognized by the producers' groups/associations/unions, respectively. Sales increase was recognized in 6 products and price increase was recognized in 7 products. For example price of Gunjo Ayu (Ayu fish of Gunjo) was increased about 30% after RCTM registration.

Countermeasures against counterfeits were developed, and differentiation from competing products is accomplished in 5 products. For example, Nagasaki Castella (Castella sponge cake of Nagasaki) obtained competitive advantage in Marketing toward Castella sponge cake produced in other areas.

Quality improvements were also recognized in most products.

Distributors/consumer recognition of products and improvement of product image were recognized in 39% of cases. Product associations/unions frequently carry out marketing activities, especially sales promotion events for introducing the product to distributors and consumers both inside and outside the region, which leads to recognition and image improvement of the product. For example, in 2014, Mihata Melon was first sold on July 13th, and 800 melons produced by 11 farmers were sold out in one hour. 100 consumers were even waiting in line for two hours in advance for obtaining reservation ticket.

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Improvement of producers' motivation is also recognized in 5 products. After registration, the producers obtain self-confidence and form selfidentify as farmers/fishermen of the distinguished products.

CONCLUSION

The obtained results contribute to better understanding under which conditions the introduction of this collective branding system will improve the producers' profitability and more generally the viability of rural areas in Japan. Registration is not the goal but the starting point of gaining the effects of RCTM, and the present study found that in the successful product cases, producers' associations or unions play central roles for marketing activities, especially for sales promoting events by emphasizing that the product quality is officially certified by the government, which can be a competitive advantage to similar products in other regions. Distributors appreciate and prefer assorting RCTM products in their stores for differentiating themselves from other retail stores.

Consumers both in the region and out-side the region also appreciate RCTM products by regarding them as better quality products and pay premium prices. For future research, the relationship between premium price and consumers' recognition about product quality needs to be studied, using agricultural economic framework, such as hedonic price model.

Implementing rules of Japan GI Law entered into force on June 1st, 2015. 19 products applied on the first day. According to Ministry of Agriculture, Forestry and Fisheries (2012; 2014), four major effects are expected from GI: 1) premium prices for producers by differentiating their products as territorially branded ones, 2) administrative organization maintains strict supervision on counterfeits, and the producers can avoid litigation costs and defend their branded products, 3) consumers can obtain qualitycontrolled products, and 4) producers can export products as authentic GI Japan products (Ministry of Agriculture, Forestry and Fisheries, 2012; 2014). For future research, differences between Japanese RCTM and Japan GI need to be studied for better understanding on how each product strategically makes use of them exclusively or jointly simply in order to avoid making producers and consumers get confused and to maximize beneficial effects.

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PAT (Traditional Food Products) which future?

Angela Crescenzi, Raffaele Mannelli[1]

***Abstract* – In Tuscany, in addition to registered food products, there is a list of 461 Traditional Food Products (PAT Italian acronym), gathered by the food census of the mid 1990s. The Ministerial Decree of 8 September 1999 n. 350 defined the "traditional food products as those whose methods of processing, preservation and aging are time-honored" and established the rules for their identification including the minimum period of historical recognition to be 25 years or older. However, there are no technical or regulatory product specifications. A proposal is being developed that could encourage product associations to create their own labels for the production and distribution of these products. The value of PAT is historical, cultural and environmental. These products are the foundation of the Mediterranean diet and therefore should be valued and protected.**

***Keywords* – Regional branding, Quality labels, Traditional Food Products (PAT), Mediterranean Diet, PDO and PGI.**

INTRODUCTION AND SCOPE

The PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication) products are the primary branding tool for regional areas, like Tuscany which boasts 28 (15 PDO and 13 PGI) registered products. In the European Union, of the 1,261 registered products, 272 belong to Italy (162 PDOs, 110 PGIs and 2 TSG (Traditional Speciality Guaranteed).

In Tuscany, in addition to these registered products, there is a list of 461 PAT (Traditional Food Products), acquired through the Italian food census carried out in the mid 1990s (4881 PAT in 2015).

This report highlights the different development opportunities between products recognized by the European Union and the products listed as PAT in Italy.

ROLES OF PAT

PDO and PGI products are monitored along their entire production line by accredited inspection organizations to ensure that the products conform to requirement standards and further investigation is done in the market place and on the internet to identify and to stop exploitation, misuse, imitation, and any other illegal activities liable to mislead the consumer as to the true origin of the product. This monitoring is carried out by public organizations and the consortia of PDO / PGI. Furthermore, consortia carry out research, promote development and divulge information to the general consumer regarding these products.

PAT are defined, by the Ministerial Decree (D.M.) of 8 September 1999 n. 350, the "traditional food as products that have time-honored methods of producing, preserving and aging" and established the rules for their identification including an age limitation of at least 25 years of historical importance. The decree includes the following points: area of production, method of production, historical significance and an evaluation of the annual quantity produced. There is, however, no product specification. The first national list of PAT of the Italian Regions was approved in 2001. The inclusion of a product on the list protects its name by prohibiting its registration as a private brand; it becomes a product description commonly among the local producers. The list has a description of the product at the time of its compilation; there is no obligation to bring up to date this data, there is no information about who proposed the inclusion of the product to the list nor about who produces it and, above all, there is no control or regulation between the description of the product and how the product is marketed.

The growing attention to these productions has encouraged the rediscovery of a rich heritage by consumers. Farmers and artisans include products from the PAT list in their inventory often seeking out unique and less known products.

As already mentioned, there are no specifications for these products. Therefore this type of product has no protection. There is no regulation of the characteristics of the products or of their origin. In this way the consumer can be is misled. These products do not have appropriate legal protection.

The D.M. 18/07/2000, entitled "National list of traditional food products", established, among other things, in Article 3 that "The insertion of a product in that list does not make up legal privileges and that reference to the geographical name does not constitute recognition of origin or provenance of the product from the territory which accounts for the above geographic name." Furthermore, the D.M. Article 5 stated that "The name of each product, it's possible synonym or dialect name cannot be the subject of filing and registration request, in accordance with current European and national legislation on rights and industrial property, from the date of publication of this decree in the Official Gazette of the Italian Republic." These restrictions are valid for each product added after 2000 but there is not a constant control of this regulation.

Another weakness of the PAT is the lack regulation and unification regarding the name of the product, its characteristics and the methods of production. In fact, the legislation does not foresee the adoption of specifications and authorizations as is mandatory for IGs.

The technical guidelines for the production of food and quality requirements related to their origin are regulated by the European Union (from Reg.ti EEC 2081/92 and 2082/92 to the Commission Regulation (EU) no. 1151/2012 of the European Parliament and Council of 21 November 2012 on the systems of quality agricultural and food products).

The European Union protects products recognized as PDO and PGI. However, the PAT these "minor"

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gastronomic heritage products are still not appropriately protected.

CAN REGIONS PROTECT PAT? IT SEEMS NOT!

When regional and sub-regional governments ruled the promotion and preservation of the PAT, the Italian Constitutional Court declared illegitimate the creation of public brands and interventions for PAT because the source/origin would give competitive advantages to local companies over national or European companies.

The Italian Constitutional Court, (the most recent cases: judgment no. 209/2013 Basilicata regional law 13/7/2012 n. 12; application no. 74/2014 Sardinia Regional Law 08/07/2014 n. 16; judgment no. 191/2012 Lazio regional law 05/08/2011 n. 9) has motivated their decisions arguing a violation of Article 117, of the first paragraph of the Italian Constitution, as breach of Community constraints set out in Articles 34 to 36 in the Treaty on the Functioning of the European Union (TFEU) and Article 120, of the first paragraph of the Italian Constitution, for invasion of the exclusive legislative competence of the State on the free movement of goods.

In addition, the Regulation (EU) No. 1151/2012 on quality schemes for agricultural products and foodstuffs, in the TITLE IV, OPTIONAL QUALITY TERMS, Article 30, paragraph one, establishes that "...the Commission shall be empowered to adopt delegated acts, reserving an additional optional quality term and laying down its conditions of use."

There seems to be no room for the recognition of quality heritage products if not in Europe. What is more, traditional character cannot be criteria for the acknowledgement of local identification because it is a basic element of STG.

A PROPOSAL

This situation is likely to dissipate this heritage of products and cultural expression of rural communities. A proposal, however, can encourage the development of collectives to create their own private labels to develop these products.

This solution would achieve some positive results:
- accelerating for the establishment and registration of collective trademarks, which may be geographic, therefore more visibility, without infringing the law;
- defining a common production and quality rules and specifications;
- increasing the quantities produced therefore allowing a continuous presence in the distribution network;
- the presence of organizations dedicated to the promotion of PAT.

The main difficulty of this proposal is the financing of the consortia or collectives. The expenses are mostly organizational: there is the need for office space, research, production and divulgation of promotional material. However, when the consortia and collectives are legally created they are able be to access public funds. Some producer collectives have attempted this road with, however, uncertain and sporadic results.

A NEW CHANCE

The Mediterranean diet was included UNESCO as part of the "Representative list of the Intangible Cultural Heritage of Humanity". Traditional foods play an essential role in the diet. The Mediterranean diet differentiates by region and on a local level it is directly linked to these minor products.

The value of PAT is historical, cultural and environmental. They are the foundation for the Mediterranean diet which should be the real infrastructure for their protection. In fact, the recognition of the diet as a part of the cultural heritage of humanity is an opportunity and obligation to adopt a long-term management plan whose purpose is the protection of this heritage.

Only by adopting a multiannual management plan defining and regulating local traditional heritage foods within the Mediterranean diet can Italy actively protect these products. In the absence of a longterm management plan for PAT, UNESCO could withdraw their recognition.

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Behind local cheese: comparing Slow Food Presidia and GIs governance systems

Mariagiulia Mariani, Claire Cerdan, Iuri Peri[1]

***Abstract* – In this paper we compare two experiences of origin based labelling systems throughthe analysis of an iconic origin product, artisan cheese. We analyse one Geographical Indication (GI) (Chefchaouen goat cheese, Morocco), one Slow Food Presidium whose producers could also join a GI (Béarn mountain cheese and Ossau-Iraty, France), one GI that is also a Presidium (PiacentinuEnnese, Italy). This paper addresses how these GIs and Presidia have been constructed and are articulated. In particular, itexplores how rules and codes of practices are negotiated. The paper considers that GI and Slow Food Presidia differ in the degree of participation and collaboration among stakeholders, and hence in the way production practices are negotiated.**
***Keywords* – Geographical Indications, Slow Food,Artisan Cheese, Governance**

INTRODUCTION

In a globalized food system, paradoxically narratives and defining labels aim to localize food. The unique quality of a product is considered to be determined by its geographical origin, with specific reference to local biological resources, history and know-how. This uniqueness can be formally recognized in order to guarantee the transparency of the food chain, the fair trade and to preserve its cultural biodiversity.

Two examples of labellingfood according to its origin are Geographical Indications (GIs) and Slow Food Presidia. These collective initiatives marketing origin-based products have a specific type of governance and yet every project implies specific stakeholders (e.g. state, civil society organizations, trade associations), norms and negotiations. But which is the best origin based labelling strategy to preserve traditional practices?

Economists explored the possible synergies between labels, cultural biodiversity and local development. Some researches focused on innovative system management, exploring bottom-up models and experiences (i.e. involving all the stakeholders) or bottom-down (i.e. with institutional guidance), pointing factors of success (Barjolle&Thevenod-Mottet,2004) and alternative supply configurations (Brunori, 2007). Social scientists questioned to which extent diversity is handled and rules are negotiated (Delfosse, 2008; Bowen&Zapata, 2009).

This paper compares the experience of three artisanlabelled cheeses: one GI (Chefchaouen goat cheese, Morocco), one Presidia whose producers could also belong to a GI (Béarn mountain cheese and Ossau-Iraty GI, France), one GI that is also a Presidium (PiacentinuEnnese, Italy). We aim to address how these quality schemes have been constructed and we look at how the supply chains are internally articulated and interplay with external stakeholders such as extension services, public bodies, civil society organizations and consumers. In particular, we address how rules and codes of practices are negotiated and established.

The paper considers that GIs and Slow Food Presidia differ for the degree of participation and collaboration among stakeholders, and hence in the way practices of production are negotiated and shared. With an anthropological aim, this paper contributesto assess the power relations behind the creation of these collective brands and their local impacts.

METHODS

The research was conducted in three countries: France, Italy and Morocco. In the first two countries the concept of GI has a long lasting history and plays a major marketing role, although with different frames and outputs. Moroccois experiencing a rapid increase of GIs and a growing exposure to the Slow Food movement activity.

The study is based on the collection of mainly ethnographic information. Fieldworks were conducted between March 2014 and June 2015 and empirical evidences collected by means of qualitative surveys as well as participatory methods, among producers, consumers and other local stakeholders of the three case studies (e.g. social movements and public actors). Case comparison is used to revel the peculiarities of each experience.

RESULTS

Chefchaouen goat cheese

Chefchaouen goat cheese is a fresh cheese manufactured in Northern Morocco. Goats feed in natural pastures, rich in aromatic plants. From 1992, benefiting from the support of international stakeholders, e.g. the Belgian and French Embassies, the MajbaneChefchaouendairy transformsthe milk of mixed breed and Alpine goats into a French-style fresh lactic cheese.Milk is collected from forty local farmers at a higher price, it is pasteurized and lactic ferments and synthetic animal rennet are added.

Since 2011, Chefchaouen goat cheese is a PGI. The only producer of the PGI cheese is the Majbane Chefchaouen dairy, managed by the National Association of Sheep and Goats Breeders (ANOC), under the administrative supervision of Ministry of Agriculture and Fisheries. ANOC is the collective body asking for the GI and negotiating the code of practices. However, since the full traceability of the cheese-making process is not guaranteed, the PGI scheme is not operational yet.

Piacentinu Ennese

Piacentinu Ennese is an ancient sheep cheese flavoured with black pepper and locally grown saffron. It got the PDO in 2011 and the Slow Food Presidia in 2013. Production and maturing must occur within the area of 9 villages in province of Enna, in the centre of

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Sicily. It is a small and qualitative production: ten cheese-makers produce 35 tonnes of cheese per year; six belong to the PDO; three of them are dairies and three are Presidium producers, including also two dairies.

The PDO is managed by the Consorzio di Tutela,a governing body that defined acode of practices not responding to several needs of the producers, e.g. selling the cheese in portions. Shepherds supplying raw milk do not belong to the Consorzio which only includes cheese-makers who are rarely also shepherds. Slow Food is supporting a redefinition of the Consorzio legal framework and code of practices.

Béarn mountain cheese

In Béarn (French Pyrenees), Slow Food is developing a Presidium promoting the cheese produced on the mountains. In fact, sheep transhume at the end of June from the valleys to pastures over 1500m. Shepherds of the three Béarn valleys are organized in an association and Slow Food is working to rediscover the ancient mountain cheese manufactured without adding lactic ferments.

The three Béarn valleys are within the area of production of the Ossau-Iraty PDO that is potentially available to all the shepherds involved in the Presidium. This PDO includes a wide variety of cheese-making styles (size, shape, maturing) and different stakeholders (transhumant shepherds, valley farmers, and industrial dairies).

DISCUSSION

We look at the motivation and the actor's involve-ment into the negotiation of the codes of practices.

In Morocco, the State is the initial and major player. Within the second pillar of the Green Morocco Plan,valuing emblematic local products (e.g. olive oil andgoat cheese) is considered a way to preserve cultural and environmental heritage while generating local economic activities. Numbers of initiatives of labelling systems are hence promoted and the directors of the national association ANOC followed this national strategy. However, this institutional com-mitment to develop activities in disadvantaged rural areas within a quality label strategy doesn't seem to be appropriated by local actors (shepherds, Majbane Chefchaouen's staff, restaurants).

Differently, in the case of PiacentinuEnnese,a few cheese-makersstarted the quality labelling. Twenty years ago they wanted to make of this peculiar almost disappeared cheese a profitable fashionable traditional product with bothPDO and Slow Food Presidia recognition.The Consorzio di Tutelacreated to launch the PDOis headed by these producers (including three dairies) and supported by local institutions, not without political disputes. Not all the producers belonging to the PDO are involved into the Slow Food Presidium despite the fact that they follow the same code of practices. The selection process is unclear to the producers and reveals an issue of authority: what does imply that Slow Food, as an experts' movement, defines who might join a collective action?

The starting point of the Ossau-Iraty PDO was closely linked to the business of three dairy industrial groups who played a central role in the definition of the PDO governance system.The Presidium involves some producers that are in the PDO, but also many that are fully against this initiativethat is generally perceived as working against the interests of small quality shepherds and cheese-makers, as banalising their product while appropriating the image of a traditional cheese.

The Ossau-Iraty PDO code of practices reflects the interests of the industrial dairies to have a standardized cheese to be easily produced and marketed. As a reaction, shepherds of Béarn joined topromote their shared vision of regional quality cheese. On the other hand, in Morocco, the State and ANOC are supporters of a modern and safe cheese. But the French-style lactic cheesedescribed in the code of practices of the PGI is bio-culturally rooted in a territory or it is a standardized product answering the demand of a new niche market? Finally, in Sicily, the Consorzio di Tutelaadopted a strict definition of the production area and preferred a territorial approach (saffron is grown locally and benefits shared). However, only the Southof the Enna province is included. The highly demanding specifications create frustration among the excluded while the dairies can circumventthe rules.

We conclude that the context of creation of the origin-based labelling systems highly vary in the three case studies. The code of practices is more likely to be to embrace traditional production practices (rather than industrial standards) according to the heterogeneity of the actors' motivation anddegree of their implicationinto the scheme.

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Conciliating public and private initiatives, local and international market development The case of Ziama-Macenta Robusta Coffee in Guinea

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***Abstract* – This paper is presenting some key lessons of the first Geographical Indication in West Africa, the Ziama-Macenta Robusta coffee, in terms of certification, access to markets and local development. The dynamic supporting the recognition of the GI has permitted to work on quality and structuring of the value chain, allowing producers to find new outlets at more rewarding prices for high quality coffee. The public support to Ziama-Macenta GI's recognition has been important: Guinean Government's and OAPI's (African Organisation for Intellectual Property) support, national public research, public funding. It has helped to establish traceability, quality control, internal control procedures, thus helping for private Fair Trade and Organic certifications.GI and private certifications have complementary roles for local development: the GI is the impetus for the development of the Ziama Region, local collaboration between value chain actors, including the development of product specifications and traceability;private certifications are insuring economic sustainability of the GI actors (thanks to selling price, pre-financing and fixed premium for cooperatives).**

***Keywords* – Geographical Indication, Sustainability Standards, Coffee Market, territorial development.**

INTRODUCTION

Geographical Indications are representing in Europe a significant market share, and are widely recognised as an efficient development tool. Not only because of the potential premium that can be obtained for farmers and other value chain actors, but also for its capacity to initiate regional initiatives, impact on other sectors.

In West Africa, despite a rapid and constant growth of urban population, local value chains are not yet sufficiently promoting local quality products, and consumers are not yet accustomed to the labelling of origin products. IRAM Development, MGE local NGO and IRAG Research Institute have worked together both for the recognition of the Ziama-Macenta GI and for the marketing of the product. Coffee is a major cash crop for Guinea. It is a source of income for thousands of small scale farmers. Guinean coffee is not well-established on the international coffee market, with low standard quality and therefore attracts only a low price (- 150 USD/ MT compared to LIFFE price(LIFFE stock exchange is the reference for Robusta, each coffee being quoted against market price, with a given premium). This is due to the fact that Guinean traders are not rewarding better quality coffee: the current value chain organization is in fact mostly focused onlower quality coffee (green coffee cherries harvested not ripenedto receive quick cash, not properly dried, not clean), exported to African countries (Senegal, Morocco and Algeria mainly).

For some specialty coffees (Blue Mountain, Colombian Coffees, as GI, but also Ethiopian Coffee or Kivu Coffee, without any official regional branding yet), a premium is linked to quality (taste linked to origin) and demand.Ziama-Macenta coffee's reputation is still mainly regional (West Africa, Algeria)or linked to the colonial period, therefore not rewarded by the coffee market.

AIMS AND METHOD

The Aims of this paper are to present the first results of the development of the GI Ziama-Macenta, and to show how GI and some private certifications can impact in synergy for the benefit of farmers and regional development.

The support to the GI has been twofold: first, strengthening local actors and the GI Association, to ensure ownership and sustainability of the GI; second, to find new market opportunities to reward farmers' efforts on quality control andtraceability and to support financially the GI organisation (internal and external control, services provision to GI members).A premium can be high if the GI is well known, which is a challenge for any coffee. For a Robusta coffee it is even more challenging. But even with a good premium, coffee market is very versatile and coffee price can too frequently be very low. That is why it has been decided to promote Ziama-Macenta coffee with 2 complementary strategies: first, promoting exceptional organoleptic qualities of the coffee, using the GI recognition as a flagship; second, having FairTrade and Organic certifications to receive high premium (+ 1000 USD/ tonne compared to standard coffee), access pre-funding from ethical banking system, and have the security of minimum LIFFE prices.

To measure the achievement of the expected results and first impacts during and after the different phases of the project, a quantitative monitoring system has been put in place, as well as some qualitative assessment with key stakeholders(in-depth interviews, regular feedback from field staff, local leaders and participation to cooperatives' General Assemblies).

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RESULTS

After two years of existence of the GI with initialexternal support, some results can be observed and described around two main dimensions: economic and territorial.

From the **economic point of view**, the promotion of Ziama-Macenta coffee's quality has been successful, allowing a premium of 13% compared to Guinean coffee market price for the first exported container (18 tons) in 2013, and 22% for the second container in 2015.Ziama-Macenta coffee is not yet well-known by consumers, but appreciated by coffee traders, roasters and demand is exceeding cooperatives' capacity: access to pre-funding is the main constraint for cooperatives, to be able to collect coffee. Export is not possible without it (as it was the case in 2013). Certifications facilitate access to pre-funding but have not been possible in 2015 because of Ebola widespread (auditors were not allowed to go in Guinea; participatory pre-funding had to be found instead). Certification should be possible in 2016, to ensure higher premium and minimum price, as well as pre-funding for 4 to 5 containers. It is also planned with a major French Fair Trade and Organic brand to put the GI on supermarket's shelves in 2017.Despite these positive results, at farmers' level, the impact is not yet significant. Small export volumes without pre-funding mechanism meaning high transaction costs, the reward at farmers' level is still limited, but should increase with export capacity. Better prices for the GI, Fair trade and organic premiums, minimum prices and access to pre-funding are strong pillars to ensure long term development of cooperatives and GI.

From the **territorial point of view**, a long term dynamic has been rewarded: some producers in the Ziama-Macenta area have tried for many years to keep a high level of quality without being able to export. With the support of researchers, this quality and the link to the influence of the "Ziama Mountains", as well as local know-how, have been validated by the recognition of "Café Ziama-Macenta" Geographical Indication (registered in 2013 by the Ministry of Industry, and OAPI). The GI is promoting good agricultural practices, including protection of the environment around the Ziama Mountains.

The GI recognition had a great impact in terms of reputation locally, Guinean people being proud having one of their products recognised by international GI experts. A direct consequence has been the strong support from local authorities: facilitation of export procedures, public funding (research and national projects), support to the development of a local coffee market for the GI.

Locally, in Macenta, several general assemblies have been organised to raise awareness, to facilitate coffee export, negotiate prices, explain the GI strategy, and discuss local development issues. The project has strengthened the main existing cooperative, and is supporting the development of new cooperatives, the GI Association being in charge of the technical transfer (fair trade and organic certification's methodology, traceability, internal control, etc.). The traceability and product specifications developed for the GI are fully used to facilitate Fair Trade and Organic certification, as well as quality control.

An interesting result is that the development plan of each cooperative (part of the Fair trade requirements) will be financed by private certifications, and discussed and monitored within the GI association, allowing better territorial planning and synergies between public and private actors. In particular, key priorities are job creation locally, infrastructures andeco-tourism development, direct sale of Ziama-Macenta coffee, promotion of other local products, local handicraft.

CONCLUSION

Voluntary sustainability certifications (RainForest Alliance, UTZ, RSPO, BCI, etc.) are today part of small farmer organisations' strategies for many commodities (coffee, cocoa, palm oil, tea, cotton, etc.). But it is too often an increasinglycompulsory burden to access markets, with too limited revenues for farmers (Ruf et al., 2013). Fair Trade certification is different, as it is giving farmers some guarantees in terms of minimum price and premiums, access to finance, allowing stable financial resources and long term strategies. Such private strategies can be profitably coordinated – with the support of projects and development experts - with a GI strategy that can target more efficientlypublic and private stakeholders in a given territory, to favour local development. The GI could be considered as a first step – publicly funded and therefore more easily widespread - towards Fair Trade and Organic certification, or even other – but less interesting for farmers - voluntary certifications.

As for any local initiative, support to GI is relevant only if there is full ownership from local actors, as well as a good leadership. It is also the case for European GIs, but African GIsare potentially more fragile, because of more insecure business environment and lower management capacities. That is why it is important to make smallholder farmers, private actors, as well as local authorities work together, with the support of value chain experts, to ensure that the GI will sustainably contribute to territorial development. Such support should not be underestimated and planned over few years' time.

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Territorial impact assessment on local products from a socio-economic-cultural point of view. The Provola of Madonie case

Borsotto P., Cristiano S., Verrascina M.[1]

***Abstract* - Italy is mostly characterized by agricultural activities within the park areas. In these areas agriculture is identified mainly in the local production. This research is part of a wider project that aims to enhance the overall biodiversity in the Italian local productions and to assess their economic, social and environmental impacts and sustainability. This paper presents the most significant results of a case study analysis conducted at farm level on a typical cow cheese produced in the Madonie Regional Park (Sicily). A specific focus group involved the most relevant economic actors of the park in view of collecting relevant information on farm's backgrounds, choices, expectations and practises in production, processing and retail. Also, the use of questionnaire and desk research helped the collection of quantitative data on production costs and profitability. The results are interesting: local production is characterized by positive profits, sustainable agricultural practices, high degree of gender inclusion and young employment as well as scarce use of temporary work and low risk of abandonment of both farming and of rural areas.**
***Keywords* – local food products, socio-economic and environmental impacts.**

INTRODUCTION

Italy, for its particular geographical features, is one of the countries most characterized by agricultural activities within the park areas. In these areas agriculture is identified mainly in the production of "niche foods" that are very often one of the main economic resources of the area.

The farming practiced in these areas is characterized by extreme variability in terms of supply by origin, method of production, intrinsic qualities, psychological values, memories, etc. Probably this it is the only way to explain the co-existence on the market of products with different production costs.

The present study aims to evaluate the socioeconomic and environmental sustainability of the farms that produce the Provola of Madonie, which is one of those niche food.

The evaluation is based on the link of such product with the park area, the entrepreneurial choices in terms of retail and marketing and the economic analysis of production cost and profits. The Provola is a typical cheese made from raw cow's whole milk and small amounts of sheep and goat milk, rennet and salt. It is a string cheese, registered in the list of the Traditional Agro-Food Products (TAP) provided by the Italian Ministry of Agriculture, Food and Forestry.

The territory of the Madonie Regional Park expresses a need in terms of organization of the milk supply chain; the production of milk and cheese has fallen dramatically as a result of the EU Directive of 1991 which called for greater controls and the provision of medical devices for milk. In those years the area was characterized by micro companies which produced and sold milk and processed products; some farmers have failed to adapt to the new Regulations and had to stop producing; others, however, have a small artisan dairies and continue the production of cheese according to tradition even today.

For nearly a decade the regional services (SOAT) have defined and adopted the specification for the Provola of Madonie establishing a number of elements necessary for production. Moreover Provola of Madonie is approved as a "Slow Food Presidium" and the specification provides more stringent standards: the production must respect the organic system and the feeding of livestock must be GMO free.

MATERIALS AND METHODS

For the specific purpose of this case study, the methodology adopted is quali-quantitative and it is based on a focus group with the relevant local actors and the collection of data on farms' investments and production costs and profits, through a questionnaire.
In detail, the methodological approach has been divided into 2 steps:

STEP 1: Conduction of a focus group which involved the relevant actors of the park area and helped to collect relevant information on farm's backgrounds, choices, expectations and practises in production, processing and retail.

STEP 2: Provision of a questionnaire and individual interviews in order to assess the farm's profitability, production costs and the environmental sustainability.

This technique (Creswell, Maietta, 2002) is widely used for studies in Agricultural Economics and Rural Sociology (Caggiano et al., 2009). In particular, we interview the 3 farms most established and specialized in the production of Provola.

In detail, for the analysis of the profitability we used the INEA web application that lets you generate a "Simplified balance sheet" according to the Italian FADN accounting method; for the production costs of Provola we used the methodology defined in the INEA study "Production costs of Ligurian floriculture" (Borsotto P., 2014). Finally, we have identified a set of indicators on the basis of the INEA study "Measure the sustainability of organic agriculture" (Aguglia L. et al. 2013) to assess the environmental and social sustainability.

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THE MAIN RESULTS

The first outcome of the research derives from focus groups, which allowed us to describe the production, in the absence of a Consortium of reference and literature.

The analysis of the balance sheets shows a different composition of the total output (Fig. 1). The costs of farms account for around 70%-80% of total output and the farm net value added, that is the portion of revenue that remains in the farm, accounts for more than 20%-30%. In detail farms 1 and 3 invest in purchases of goods and production services, while farm 1, which has wage earners, adds to the costs for external factors the remuneration of wage earners.

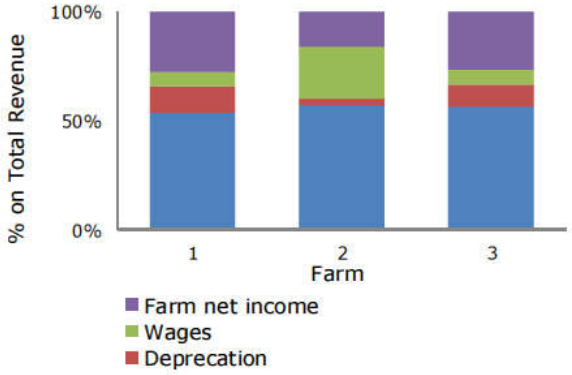

Figure 1. Total output breakdown

In 2014, according to the results of the data collected, the cost to produce 1 kg of Provola amounts on farms 1 and 2, respectively, 5.4 and 5.7 euro per kilo, while in farm 3 it amounts to 9.5 euro per kilo.

The difference in the results is to be found both in the technical breeding business and in the choice to work under the "Slow Food Presidium"; in particular the farm 3 does not have a self-sufficient forage and buys expensive organic feed. In any case, since the product is sold, respectively at 7.5, 6.5 and 10.5 euro per kilo it is possible to say that farmers gain a certain economic margin, which is even more relevant if we consider the net cost (ie the total cost net of costs for the family labor and interest on capital).

The main costs of the farm 1 are the charged costs (CC 33%), ie those related to family labor, the specific costs (SC 29%), in particular the veterinary and direct costs (DCC 26%), especially those related to the mechanization. The main costs of the farm 2, however, cover the SC (49%), in particular the purchase of milk and DCC (40%) that are the costs of labor fixed. Finally the CS are the main costs of the farm 3, particularly purchases of feed (Fig. 2).

All the farms practice a sustainable agriculture - not employ synthetic imput -, pay attention to biodiversity and try to achieve food self-sufficiency by own production and by reducing the purchases.

From the social point of view there is a high degree of social inclusion, with a good presence of women running farms and young employment.

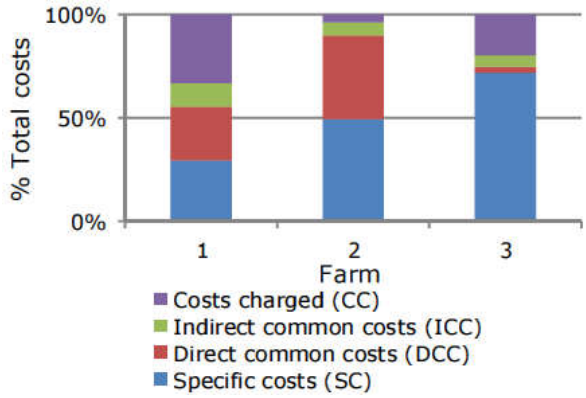

Figure 2. Cost of production

THE MAIN CONCLUSIONS

The study highlights that in the territory of the Madonie Regional Park the production of niche food is convenient. Indeed the farms are able to develop positive profits and it is possible to extimate an economic margin to produce Provola. The presence of a brand registered (Slow Food) allows the consumers to recognize the product and its quality as well as its link with the territory.

This production allows to maintain high levels of environmental sustainability (extensive grazing, native breeds, wide use of local forage) for agriculture in a manner consistent with the presence of farmers within a protected area.

It is important, at last, to underline the social importance of these niche food: the 3 farms are characterized by a low risk of abandonment of farming and so of rural areas.

All things considered, the case study shows that the maintenance of local production, if properly exploited, is able to maintain a sustainable agriculture in terms of socio-economic and environmental impact and can be a capital element in development strategies for protected areas.

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The 'Piadina Romagnola' mess. A new legal case for an old question: what is a GI?

Mr Andrea Zappalaglio, LLM (DPhil, University of Oxford)[1]

***Abstract* – The analysis of the recent 'Piadina Romagnola' shows that there are at least two opposing views regarding the function and juridical nature of *sui generis* GI rules. A first one, that interprets the law, i.e. Regulation 1151/2012, in a literal way, thus allowing the industrial production of traditional products as long as they comply with the specification. A second one, that advocates for a narrower interpretation in order to exclude goods that are not produced in a way that reflects the 'tradition'. It will be concluded that, although there is not a single answer, sometimes a narrow way of construing GIs can be counterproductive. If a group of producers wants to distinguish itself, it can resort to a private certification, such as a collective mark, thus creating a two-level system that can be strategically more effective and more in line with the text of the law.**

***Keywords* – function of *sui generis* GIs; 'PiadinaRomagnola' case; collective marks.**

INTRODUCTION

Geographical Indications (GIs) are often presented as a market-oriented multipurpose tool of 'quasi-public' nature (Gangjee 2015; Marie-Vivien 2010), capable to foster rural development and preserve the traditional link between a product and its place of origin [the literature on this point is exterminate, for some 'classics' see Bérard&Marchenay (2006) and Barham (2003)].

However, practice shows that, from time to time, the function *sui generis* GI rules is interpreted in a way that does not necessarily reflect the meaning of the text and/or the rationale of the relevant law, i.e. Regulation 1151/2012 'on quality schemes for quality products and foodstuffs'. The tendency to construe this legal institute in a very restrictive way, thus considering them an instrument to protect only a small group of 'traditional' products, instead of strategic assets that can benefit a whole territory and a larger group of producers, can be misleading. Furthermore, it must be borne in mind that *sui generis* GIs regimes are not the only institutes that can protect traditional/artisanal goods. Indeed, other instruments such as collective or certification marks can be used and, because of their private nature, can be more flexible in order to accommodate different exigencies, e.g. strengthening protection for specific subsets of niche goods.

Therefore, there is one main question that needs an answer: what is exactly the function of the European *sui generis* GI system?

This paper will contribute to the debate taking as starting point a recent legal dispute concerning the 'PiadinaRomagnola PGI'. This case consists in a ruling of the Italian administrative tribunal of first instance (TAR Lazio) recently reversed on appeal by the Italian State Council ('*Consiglio di Stato*'). Despite being unknown at European level, it is indeed interesting as it reveals some misunderstandings about the current EU *sui generis*GI regime.

It will be concluded that a too restrictive interpretation of the function of GIs may be inexpedient. Even if the strategy to be followed depends on a case-by-case analysis, the protection of niche traditional/artisanal products can be better achieved through a mix of trademark/GI protection orPDO/PGI schemes. This would efficiently solve different concrete issues without distorting the relevant provisions of law.

THE BACKGROUND AND THE CASE

The application for the 'Piadina Romagnola PGI' was published in the registers of the EU Commission on 21 May 2014. It was a success for the Consortium for the promotion of the Piadina Romagnola ('Consorzio per la Promozione della Piadina Romagnola').

However, the Decree that granted provisional protection at national level to the designation 'PiadinaRomagnola'as well as the application for registration of the PGI were challenged, together with other related documents, in front of the Italian Administrative Tribunal of First Instance (*TAR del Lazio*) that set them aside (TAR Lazio, 5148/2014).The plaintiff, indeed, was in clear conflict of interests. In fact, it was a company that had made the bread for the *piadina* for 25 years through an industrial procedure. The problem was that it was based outside the area of production provided by the specification.

Therefore, it would have been forced to stop producing the product under the name 'Piadina Romagnola'. The case per se would have been uninteresting, all the more because the argumentation of the plaintiff was not convincing [it is neither possible nor useful to provide details here, for a good analysis see (Paganizza, 2014)]. Instead, the reaction of the public opinion and of some wellknown associations such as Slow Food [that strongly disagreed with the specification from the very beginning (Slow Food Emilia Romagna, 2013; Petrini, 2014)] made it a relatively popular case. This was due to the fact that the product specificationallows to some extent the prepara-tion of the good through an industrial procedure.

Hence, as anticipated, the Administrative Tribunal annulled the specification by arguing that, since there was no difference between hand-made and industrially-made *piadina*, the former was the only one that deserved protection because it is the one that consumers consider the 'original' product.

However, the Consortium appealed and the State Council reversed the decision, thus saving the specification (Consiglio di Stato6933/2015). In extreme synthesis,according to the administrative tribunal the court of first instance misinterpreted the law on three related points: (1) the Regulation 1151/2012 considers that the reputational link

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between the product and its place of origin isenough to obtain a PGI; (2) in this regard the Regulation does not distinguish between artisanal and industrial products; (3) this distinction cannot be validly drawn when it is proved that there is no difference between the product made in a way or in the other.

SOME REFLECTIONS ON THE CASE AND CONCLUSIONS

The State Council interpreted the law well. Indeed, it is true that art 5 Regulation 1151/2012 does not include the artisanal character of the product among the requirements for obtaining a PDO or a PGI. Of course, the Regulation clearly recognises the importance of protecting traditional goods and fostering rural development (see, among the others, recitals 2 and 4 of the Preamble). However, the text as a whole is sufficiently broad to accommodate different situations and this gap cannot be unintentional.

The 'Piadina Romagnola' case is particularly interesting as it shows the clash of two opposite views. On the one hand, the restrictive one, supported by the Slow Food movement and all the opponents to the specification (with the only exception of the actual plaintiff, the position of which seemed legally weak and very opportunistic); on the other hand, the broader one that, interpreting literally the Regulation, wants to extend the PDO/PGI scheme to indus-tries, as long as they produce a good that is not qualitatively incompatible with the hand-made one.

Which is the right way to go? There is no straight-forward answer. On the one hand, allowing the industry to use the PGI can be counterproductive as they could drive out of business the small producers. On the other hand, an unnecessary stress on 'tradition' canlead to uncomfortable consequences. In this regard, at least two preliminary observations have to be made.

First of all, the concept of 'tradition' is opened to different interpretations (Traegar et al., 2007) and may be victim of distortive conducts.

Second, it is not granted at all that GI rules can per se ensure that the product is the 'true' one and that is made by the custodians of the tradition [(Gangjee, forthcoming); Broude (2005) famously talks of the risk of 'invented traditions'].

In particular, in the case of *piadina*, a narrow interpretation of the rationale of the Regulation would make the grant of the PGI practically useless. In fact, if the only one who can claim the use of the GI is the traditional '*piadinara'*, i.e. a woman who cooks fresh *piadine* as street food [Petrini (2014)], then, there is no purpose in having a PGI. After all, GIs are always a label meant to be used on the market. Hence, on the one hand, restricting the use of the PGI to mere street-food cooks is not in line with the nature of GIs.

On the other hand, allowing artisanal makers, e.g. bakers, to use the PGI while excluding larger producers that respect the specification and, therefore, provide a product compliant with the tradition as codified there, is discriminatory and detrimental to the economic interests of the areas that traditionally produce the *piadina*.

It is suggested that what those who advocate for a narrower concept of 'Piadina Romagnola' concretely want is a private form of certification that can be more restrictive than *sui generis* GIs. Therefore, nothing prevents the artisanal producers who want to distinguish themselves to use the PGI in parallel with a collective mark, with or without the Slowfood label, in order to create an 'exclusive club'that may justify higher prices on the market, thus sustaining its members, without 'stretching' the rationale of Regulation 1151/2012.

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Lessons learned on GI vs territorial label: the case of Kopaonik ajvar, Serbia

E. Vandecandelaere, T. Zivadinovic[1]

***Abstract* –This paper provides an overview of the local decision process to transform a regional reputation (Kopaonik area in Serbia) into the one of local quality products, thanks to a regional branding strategy. The coordination between the local stakeholders provides an example of effective cooperation between active private initiative and supportive local authorities, with facilitation from a technical assistance project. This case also illustrates some of the reasons as to why choosing the geographical indication among the possible regional branding strategies.**
***Keywords*: geographical indication, territorial label, reputation, Serbia.**

INTRODUCTION

When a region is well-known for its mountain landscape and sport attractiveness, and when its name is synonym of purity and quality, this offers a good ground for a territorial strategy based on regional branding for the local food products. Two main approaches can be then considered: *i*) the geographical indication (GI) aiming at protecting, under the TRIPS[2] Agreement, names or words associated with a place and used to identify products coming from such place, as well as having an originlinked quality (characteristics or reputation); *ii*) and the territorial label (TL) referring to a territory and under which different localized products can be promoted (FAO, 2009). In such situation, it can be assumed that the characteristics of the local products are determinant in the choice of the most adequate branding strategy by local stakeholders :a GI strategy may be preferably chosen in the case of one key origin-linked quality product with high reputation, while a TL strategy could be more appropriate and therefore chosen when the territory presents a variety of localized and complementary goods and services (private and public) that interact in local markets, with a potential to build upon a basket of goods and services (Hirczack et al., 2008).

METHODS

The authors analysed a pilot case in the framework of a technical assistance project implemented by FAO and EBRD[3] in Serbia to confirm this assumption.

The objective of the project, started in March 2014, was to support development of GIs in Serbia, through technical assistance to producers in different pilot areas and public authorities. In collaboration with Foodland– a national company targeting high quality products sourcing and processing fruits and vegetables in Kopaonik area– the project is supporting the local stakeholders group in the development of their regional branding strategy. Kopaonik is located in the South-West of Serbia, famous for its mountain attractions, especially skiing, and its purity image, while being an important production area for a variety of fruits, and in particular for wild forest blueberries, raspberries and mushrooms (the protected National Park of Kopaonik, is a synonym for natural and healthy fruits/vegetables). In the case of Kopaonik, the project team raised awareness of local stakeholders on GI and also on TL as this latter appeared as a relevant option to benefit all local horticultural products. The project team organized a number of meetings with the local stakeholders (more than 100 producers of peppers, 13-15 processors of different size, local authorities under the Kopaonik region and tourist office) and held at different stages of the process, to present and discuss the two strategies, and in parallel the local stakeholders met among themselves to agree on a strategy. To help the decision making, an urban consumer survey was carried out assessing the consumer perception of the local food products and the Kopaonik reputation. The project team also facilitated a number of meetings once the decision was made, in order to help formulating the strategy, elaborating the specifications, and establishing the producers association.

RESULTS

The local producers involved in the discussion all produce a variety of fresh and processed fruits and vegetable products including wild forest ones. However, the two important products for them are: the wild blueberry as being relatively known and specific, and ajvar which is a typical product made of processed peppers (roasted, peeled, , grained and mashed), that can be found, although with some recipe variations, throughout Serbia and some neighbouring countries. The ajvar produced in Kopaonik demonstrates some local specificity as compared to others, and especially the Leskovac ajvar which is already registered as a GI product in Serbia[4].

The quality of the ajvar produced at Kopaonik is also very consistent since almost all processors from the area have cooperated with the Cooperative Kopaonicanka which existed in the area in the 80s.

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[2] The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization

[3] FAO: Food and Agriculture Organization of the United Nations; EBRD: European Bank for Reconstruction and Development; Project: "Support to more efficient and inclusive agri-food chains: development of origin based labels in the horticultural sector"

[4] The Leskovac one is produced from the peppers from the Leskovac flat lowlands, while Kopaonik one is produced from the peppers produced from the Trstenik and Aleksandrovac areas (higher altitude). Ajvar from Kopaonik has softer and smoother consistency, with strong taste of roasted pepper, and more orangered colour. This difference comes from the specific preparation called "zaprska" where pepper is cooked from the beginning in its own juice with very little added oil, and then at the end, boiling oil is pored over the cooked pepper. In this way, the process of cooking in shorter, which preserves more natural colour and not getting dark red colour.

The production was based on the cooperative principle of many small households producing under the same technology and selling jointly their products through the cooperative. The same method was followed by Foodland when it started its operations in Kopaonik. From the consumer survey, in terms of spontaneous reputation, Serbian consumers associate high quality of blueberries to Kopaonik (13%, the highest score), and in terms of notoriety, the ajvar is primarily associated to Leskovac (53%), and then to Southern Serbia (16%) where Kopaonik is located. Processed fruit products from Kopaonik and from other regions of Serbia are mostly perceived as equal in quality (55%) but still a significant number of urban consumers (43%) considers processed fruit products from Kopaonik as of better quality than the products from other regions.

Based on these results, the TL strategy seems more relevant to transfer the image and reputation of Kopaonik Mountain to the local foods and further builds a basket of territorial goods and services. With regards to the GI strategy, the project team was expecting the wild blueberry to be considered for a pilot due to its reputation. Nevertheless, after three months of meetings, the decision of the producers group was made: the GI strategy for ajvar. Therefore, this decision was not so much based on the urban consumer perception, but more on the own local stakeholders perceptions and market vision. Firstly, the group preferred to focus on one product for the pilot to be more efficient and to learn from this experience, to then eventually extend it by themselves to other products. Secondly, the fact that GI benefit from a specific law, recently updated in Serbia[5], provides an official recognition by the public authorities with eventually a public seal and a system of guarantees key for the marketing strategy. Undeniably, the market perspective was determinant in the decision, as the GI also offers opportunities to enter EU niche markets. Lastly, the history of the ajvar production in the area, with the former cooperative linking household producers, may explain the reason why the ajvar was selected as pilot, despite its lower notoriety and the possible further difficulty in the registration process[6]. Indeed this common legacy around ajvar provides the local stakeholders with a sense of local identity and they perceived it as having specific qualities with important potential on the market. This last idea was strongly supported by Foodland who played a leading role in the process, being a leader in the market.

Such legacy and the role of the leading company can also explain the smooth process among stakeholders' group to reach consensus through constructive discussions. The working group transformed itself into an Association "Kopaonik Original" composed of representatives of the main processing companies and small processors active in the area, the cooperative of pepper producers, and is actively supported by the local public authorities and touristic organisations.

This association, upon submission of the Ajvar of Kopaonik GI request, could then further develop the promotional process for other local processed products such as the blueberry natural juice or "slatko" (confiture type), forest strawberries' and rosehip jams, etc.

DISCUSSION ON THE RESULTS AND FURTHER STEPS

This case provides interesting elements for the decision making process around the GI/product or label/territory strategies with the aim to use a geographical reputation (Kopaonik Mountain) for the promotion of local food products. Although the TL may have been relevant to create one umbrella for all food products originating from Kopaonik to benefit from its purity image, the GI approach for ajvar was benefiting from the legacy and local identity it conveyed to local stakeholders. In addition, the market perspectives, certainly supported by the leading company on the market (locally and abroad) was the main argument.

Another interesting issue was brought by this case. Normally, the concept of GI as an intellectual property tool aims at protecting an existing reputation. In this case, Kopaonik is well known but not yet clearly associated to ajvar. The GI strategy in this case is also used to transfer a place reputation to a local product that, incidentally, presents all characteristics for high quality product linked to the geographical origin. Additionally, this case illustrates an example of effective cooperation among private companies and between private and public sector for the promotion of the region and making the best out of it. Local authorities are supportive to the private companies' process and decision, having in mind that the development of GI should benefit to the whole area.

From this perspective, the case offers a bottom-up approach, where the project team was only a technical support to the local process, and led to the creation of a new Association who will play a role not only for the GI ajvar but for the promotion of all local food products, that will benefit from its learning process.

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[5] New Law on GIs was adopted in autumn 2010.
[6] At the begining of the project it was not clear whether the ajvar of Kopaonik could demonstrate specificity compared to the wellestablished ajvar of Leskovac

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Geographical Indications and Trademarks in Vietnam: confusion or real difference?

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***Abstract* – Geographical indications (GIs) in Vietnam are protected through a sui generis system involving a State-driven management following a top-down approach. However, in practice, collective or certification trademarks (TMs) are increasingly used as origin labels, following the same path of a State-driven process. This is mainly explained by the very demanding criteria to meet for proving the qualitative link with the origin in the case of GIs, which may be considered as going beyond the GI definition, and the sometimes arbitrary choice between TM and GIs to meet quotas. Drawing upon case studies, the paper shows that the choice between GIs or TMs is not the most relevant factor to contribute to local economic development, preserve traditional knowledge and conserve biodiversity. The marketing channels seem to be more significant. Yet the lack of consideration of the weaker level of protection of TMs compared to GIs might be a threat. Finally, it seems legitimate to question the EU's preferential policy for GIs over TMs in the bilateral agreement between Vietnam and the EU.**

***Keywords* – Geographical Indications, Trademarks, Vietnam, EU.**

INTRODUCTION

Regional branding initiatives are more and more spread as a means for reconnecting agrifood products to places and, by doing so, for creating value in rural areas. Regional branding encompasses several types of initiatives, ranging from very formal ones – such as geographical indications (GIs) protected worldwide since the adoption of the Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement of the World Trade Organisation (WTO) in 1995– to umbrella strategies where links between products and place are much weaker.

In Vietnam, regional branding initiatives result from projects funded by public authorities and organisations, with funding and subsidies available from both domestic and international sources. Clearly, the availability of public funding is a demonstration of the increasingly growing interest generated in the country by GIs and TMs using geographical names as a promising tool for 'socio-economic development […] to eliminate hunger and reduce poverty' and for the preservation of the 'cultural values and traditional knowledge of the nation'.

In Vietnam, the actual legal framework for protecting geographical names designating origin products, remodelled in 2005 with the adoption of the Intellec tual Property Law (IP Law) to allow the country's accession to the WTO, confirmed the choice of a sui generis GI system which was first established in 1995 for the protection of appellations of origin (AOs) (Dao_The, Vu_Trong et al. 2009). A feature of this system is that the registration and management processes are driven by state authorities through a top-down approach leading to 45 registered GIs in 2015 (including 3 foreign GIs). In practice, collective or certification trademarks (TMs) which have also been introduced in 2005 are increasingly used as origin labels, following the same path of a Statedriven process, with about 130 collective and 60 certification TMs (May 2013). In practice, GIs and TMs are placed at the same level, without entering the hot debate of conflict between countries with sui generis GI systems and countries with the TMs systems (Josling 2006).

Drawing upon a number of case studies, we will show how the choice between GIs and TMs in Vietnam is often arbitrary, and its consequences at national and international level to contribute to local economic development, preserve traditional knowledge and conserve biodiversity.

METHODS

To answer the question we raised, we analysed legal national texts such as the IP Law and its circulars and decrees as well as other legal sources such as GI specifications and regulations of use of TMs (for a dozen of GIs and a dozen of TMs). We also conducted field work on several cases of GIs and TMs, using interviews with local authorities and stakeholders of the supply chain. Data are also sourced from development projects we have been involved in, funded by international agencies.

THE CHOICE BETWEEN GIS AND TMS?

One of the reasons of the success of TMs versus GIs is the very demanding criteria to meet for proving the qualitative link with the origin in the case of GIs, due to the experience of AOs back to 1995, with the famous Nuoc Mam from Phu Quoc being an AO now protected in the EU since 2012. However, the link between product and place could be less stringent in the case of GIs considering that, according to the IP Law of Vietnam, reputation, as determined on the basis of consumers' trust through the extent to which the GI is known and selected by consumers, is a sufficient criterion for registering GIs. However, in practice, all registered GIs had to demonstrate a quality or characteristics linked to the origin, defined by one or several qualitative, quantitative or physical, chemical, microbiological perceptible norms which shall be testable by technical means or experts with appropriate testing methods (Thomas and Dao 2009).

Moreover, the choice of a particular means of protection in Vietnam may sometimes be done in an arbitrary way with the view to meet the quotas for GIs and TMs attributed to each Province through public policy. For example the Shan tuyết tea from Suối Giàng in the Province of Yen Bai is protected as a certification TM because there was already a GI in the same province (for the cinnamon of Van Yen), whereas

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the denomination Shan tuyết tea from Moc Chau, in another Province, has been registered as a GI. Such arbitrary character is even more evident when looking at the stakeholders involved in registering GIs and TMs, in a context of State-driven top-down process. By law, the owner of all GIs is the State, and in practice GI applications are filed by the provincial Departments of Science and Technology (DOST) or the People' Committees (PC) of the provinces, districts or cities concerned.

Certification TMs are usually owned by local public authorities (33 out of 36 TMs comprising geographical name as for May 2013) who are in charge of their control. Regarding collective TMs, even if they are owned by a collective organization of producers, such collective has usually been established with the support of a public authority, as it is the case of the collective TM for sticky rice from Đông Triều. Such involvement of local authorities including for TMs is explained by the obligation under IP Law, when TMs are for local specialties of Vietnam, to get the permission of the competent state agency. The confusion is even wider considering that, for GIs, local authorities are in charge, in the post-registration step, to set up the collective organisation responsible for managing the GI by delegation. For instance, in the case of the Fried Calamari from Ha Long GI, both the establishment of the producers association and the nomination of its President were decided by the PC of Ha Long City. Other similarities regard the control schemes which (in theory as no control is effective yet) are provided by the same agency for TMs and GIs: the Directorate for Standards, Metrology and Quality at the Provincial level (STAMEQ).

Yet the National Office of Intellectual Property tries to apply substantive criteria to discriminate between GIs and TMs, with for example the advice to go for a certification TM and not a GI for the milk from Bavi because of lack of a terroir effect.

CONSEQUENCES AT NATIONAL AND INTERNATIONAL LEVEL

Governed in a similar way, with a strong State involvement as in many other Asian countries (Biénabe and Marie-Vivien 2015), the coexistence of GIs and TMs raises questions. At first sight, looking at their contribution to local economic development, preservation of traditional knowledge and conservation of biodiversity, the choice of a legal tool to protect geographical origin does not appear as the most relevant factor. Indeed, it has been shown in another paper that a number of contextual factors related to the actual operation of the initiatives, including the space available for farmers and producers to take ownership of the initiatives, limited financial resources of the control agencies and of the producers' and farmers associations, low awareness and lack of production or management capacities are all decisive determinants that promote or hinder the use of the label and the success of the initiatives from a socio-economic development perspective (Pick, Marie-Vivien et al. 2015). Looking at the legal protection itself, it is a different story. Indeed, TMs are usually composed of a geographical name combined with a logo, thus not conferring exclusive right on the geographical name contrary to GIs, and TMs are governed by the first to file, first in right principle.

For example, in the case of the certification TM Moc Chau vegetables, little awareness of the legal differences between GIs and TMs led to a dispute with the owner of a previous TM comprising the name Moc Chau also for vegetables. At the international level, we question the appropriateness of the EU's preferential policy for GIs protection over TMs in the newly signed Protocol to the Framework Agreement on Comprehensive Partnership and Cooperation between Vietnam and the EU.

According to this Protocol, only Vietnamese GIs will be legally recognised in the EU but none of the Vietnamese TMs, as the EU does not consider TMs comprising geographical name as GIs, especially in a country which provides for a GI sui generis system.
However, in light of the high number of TMs for origin products complying with the criteria of reputation provided by GI definition in Vietnam and worldwide (PGI in the EU), it would have seemed appropriate for the EU to ask Vietnam to convert those complying and eligible certification and collective TMs into GIs, hereby enlarging the number of EU GIs included in the Agreement… a win-win process.

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Geographical indications economic impacts: a methodology to assess "well established GIs"

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***Abstract* – Geographical indications (GIs) can be considered as tools for the development of sustainable food systems, and stakeholders at local and international levels often require economic data relating to the development of GIs, especially in terms of impacts. FAO has developed a collaboration with experts and Masters/PhD students to develop a methodology for assessing economic impacts of GIs on 10 cases over the world. The paper proposes an original methodology to collect data from various GI cases over the world and analyse them in a way to authorize some clear evidence about GI economic impacts and present some first results and discussion about them.**
***Keywords* – Geographical indication, economic impacts, methodology, first results.**

INTRODUCTION

Geographical indications (GIs) may be considered as tools for the development of sustainable food systems and stakeholders often require economic data on GIs, especially in terms of impacts. Little work has been done to collect representative empirical data, and to analyse the economic impacts of GIs as a whole in order to draw clear-cut conclusions (Aragrande, 2013).

In addition, although the economic impacts of GIs have been well documented by various researchers (Moschini et al., 2008; Josling, 2006; Dinopoulos and West, 2005; Rangnekar, 2004; Jena and Grote, 2010), empirical demonstration of the net benefits of GIs is relatively sparse, especially in countries where GI procedures are more recent (outside Europe). The objective of this paper is to propose an original methodology to collect empirical data, which has been implemented on 10 GI cases from different countries in a way to authorize some clear evidence about GI economic impacts.

METHODOLOGY

A methodology was built in the frame of collaboration between the Food and Agriculture Organization of the United Nations (FAO) and 4 Universities, with professors, researchers, and experts on GI[2] , organized in a steering committee with the aim to define the common methodology, provide guidelines to Master or PhD students for data collection and supervise case studies and synthetize all the results.

Relying on a preliminary research on registered GIs carried out by the students, 10 cases[3] have been selected as "well established GI" according to the existence of three conditions allowing a common sense of a "GI actual concept" (Barjolle and Sylvander, 2002; FAO, 2009): *i*) Justification: an originlinked quality or reputation has been well demonstrated and defined in the products' specifications; *ii*) Governance: the GI process is based on collective action (managed by a group of producers); *iii*) Market and consumers: as an economic tool for differentiation and protection: the GI is being used on the markets. The methodology is a matter of measuring the capacity of the GI to generate economic effects in terms of price, of income for producers, of market access and of resilience, with qualitative and quantitative data (prices, gross margins and incomes for farmers and market)[4]. Each student detailed further the methodology in relation to its case, defining the specific hypothesis related to GI impacts and the methods to collect the necessary data during the field interviews. Thanks to a continuous process of information sharing from the students, the ten cases provided preliminary results.

RESULTS

A diversity of economic benefits is observed as a result of the GI process:

- Higher prices paid by consumers are present in most cases, with different causes:
  - As a result of the protection and expansion of the markets;
  - In relation with the improvement of quality and yield, leading also to higher profitability;
  - In relation with quantity and quality management.

This can lead to better income for producers, especially in the cases of GIs established since a long time, but distribution of the premium doesn't always reach the farmers, and can be concentrated downstream the value chain.

- Better governance and strengthening of the vertical and horizontal linkages among stakeholders (value chain and territory, public and private) that increase efficiency in decision making, and reduce transaction costs; this can be observed as "in progress" in the recent GIs and consolidated with significant impacts on "mature GIs".
- Resilience : this concerns the "mature GIs" with solid governance and improved governing rules along the years but can also be observed in recent

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2 ETH Zurich, Agricultural Economics Group; VetAgro Sup, Clermont-; School of Agricultural Studies of Angers (ESA Group) within the specific framework of the Food Identity MSc; Montpellier SupAgro

3 Kona coffee (Hawai'i), Manchego cheese (Spain), Ryukyu Awamori liqueur (Japan), Darjeeling tea (India), Penja pepper (Cameroun), Taliouine saffron (Morocco), Cafe de Colombia, Tête de Moine cheese Switzerland) Futog cabbage (Serbia), Costa Negra and Vale dos Vinhedos wine (Brazil).

4 A broader analysis (the meso- or even macro levels) was not considered in the present work, but may be so on a subsequent occasion. This work should lay the foundations for a methodology that can be replicated in the context of a wider study – if the results justify it.

GIs such as in the case of the saffron of Taliouine, where, since its registration, the price paid to producers and price paid by consumers remained higher that the non-GI saffron which keeps decreasing along the years.
- New income coming from diversification when the marketing strategy and communication enhanced third activities such as tourism.
- Strategy to secure the legitimacy of the GI governing body through an official recognition with international significance.

The cases provide some important lessons learnt:
- GI can generate economic impacts through the dissemination of innovative practices. Indeed the role of GI product's specification is notable to disseminate rapidly some interesting practices, being perceived as a quality sign for differentiation and adding-value, and with a system of support (capacity building) and control (certification). In such situations, the role of GI organization is even more important so to ensure the dissemination and monitor its impacts (in particular to avoid negative impacts).
- GI may be a marketing tool for decommoditization (differentiation and adding value) for export: when dealing with "commodity" on international markets such as tea or green coffee, it is interesting to see how GI is used as a tool for capitalizing on a geographical name and reputation, but in these cases, backward linkages and the potential for territorial impacts are not always taken into consideration.
- The economic impacts are more limited in the recent GI cases where governance is still in progress, nevertheless, social or environmental impacts may be more concrete. For example, in the case of the Futog cabbage, the objective of the producers was to preserve the old local variety from extinction, and the GI appears as an appropriate tool for maintaining a niche market that ensure the viability of the more work intensive production of such cabbage with specific organoleptic qualities but low shelve conservation.
- There is an important influence of the legal and institutional framework, for example in the cases where GI process or certifications is subsidized the first years or where GI has been strongly encouraged by authorities, but the socio-cultural context also impact strongly the governance and sustainability of the GI system.

DISCUSSION

These are only preliminary results as the analysis of each case is currently still in progress, but they already provided important lessons learnt. The fact that the cases have been identified to illustrate the "GI actual concept" will allow to go beyond the usual conclusion that the impacts vary according to the way the GI have been established or are being managed. In all cases in use, economic impacts can be identified, explaining why producers keep implementing the GI strategy despite the costs and difficulties encountered. When economic impacts are low, the deeper analysis may confirm this to be attributed to the fact that pre-conditions (justification, governance, market) are not so well established. Regarding the methodology, authors learn that only field research allows detecting whether the conditions defined for well-established GIs are filled, as discrepancies can appear between the real situation and how the GI success are communicated (in positive or negative). The study is on progress and will allow going more into details about the causal relations of impacts and analysing them in a transversal way and conclude on some recommendations. It would be worth then expanding such study to more GI cases, focusing on well-established GIs with high filled-level conditions to be even more precise about the links between the type and level of GI impacts and the local context, in particular the legal and institutional framework.

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Geographical Indication as a tool to strengthen sociotechnical quality niches. The case of Corsican Clementine

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***Abstract* – In this paper, we explore the sociotechnical mechanism through which Geographical Indications (GIs) can strengthen alternative quality models. Building on transition theory, we analyzed the reconfigurations of the Corsican Clementine basin under a recent Protected Geographical Indication (PGI). Results show that the PGI stimulated 3 processes - the construction of a local norm, the coordination of actor network, and the strengthening of quality - which together contributed to the success of the Corsican Clementine, despite its specific quality and production model were challenging the competition rules of the citrus sector. In the light of transition framework, these findings suggest that the PGI strengthened a prior existing socio-technical niche by regulating tensions with regime.**

***Keywords* – Transition, innovation, typicity, Corsica**

INTRODUCTION

Green revolution and globalization have deeply transformed agri-food systems toward standardization and deterioration of products' gustative quality. In reaction to this trend, Geographical Indications (GIs) have emerged as a major source of innovation, leading to a bloom of high quality products related to original technical models. In this paper, we analyze this dual movement, by building on the theory of Multi Level Perspective (MLP) on transition (Rip & Kemp, 1998; Geels, 2004). This body of literature shows that in agriculture, undesirable situations (e.g. massive use of pesticide, low product quality) are stabilized by lock-in mechanisms structured at the level of the socio-technical regime. By contrast, alternative technical models emerge and develop in protected spaces called niches. On the basis of this theoretical framework, we wonder to what extent and through which mechanisms GIs can strengthen niches where alternative qualities develop despite tensions with overall agricultural regime.

METHODS

In order to address this question, we analyzed the recent reconfigurations of the Corsican Clementine production basin under the influence of a Protected Geographical Indication (PGI). This case study is interesting with regard to the question of niche construction versus regime, because both product and production model associated with Corsican Clementine are challenging the competition rules of the citrus sector. Thus, we sought to understand the role that the PGI has played with regard to the co evolution of socio-technical network, agricultural practices, and product quality. Fieldwork with semistructured interviews of a set of local actors and data analysis were driven by our theoretical framework.

We thus analyzed the system generated by (and generating) Corsican Clementine as a sociotechnical network, composed of 3 inter related components (Geels, 2004) – actor network, rules system, and technology-, and to what extent it behaves as a niche (i.e. a protected space where an alternative production model develops).

RESULTS

In the 1960-70s, the Corsican Clementine developed under the protection of the monopoly over commercialization of fruits with its leaves. This monopoly resulted in a sanitary barrier, which prevented other countries from exporting fruits together with leaves.

In Corsica, the objective of having the fresh leaf attached to fruits when marketed had profound implications for the management of harvest and for the product quality. In fact, it prevented storage and ethylene degreening (which deteriorate leaf aspect).

Accordingly, farmers had to carry a selective picking of naturally coloured fruits, involving several harvests on each tree. In turn, the leaf-driven harvest model indirectly allowed the expression of the specific sensorial characteristics of the Clementine varieties that had been developed by a local breeder. In the cool but not cold Corsican autumns, the fruits that have just coloured keep green pigments on their bottom part (inducing what actors call "culvert"), and the on-tree colouring occurs at a ripening stage where fruits have not achieved acidity drop (inducing "acidulous taste").

At the same time, the leaf acted as a protection to the Corsican model, despite tensions with the competition rules of the citrus sector. The added value provided by the leaf made economically bearable harvest costs and risks. The leaf also hid - both physically and symbolically - the product's specificities (small calibre, acidulous taste, "cul-vert") that were regarded as defects in the mass market. In this protected space, actor network developed under the influence of both agronomical and sensorial implication of the "work with leaf". On the production side, local actors built a "just-in-time" supply chains as a way to mitigate harvest risks and costs. On the consumers' side, the persistence and use of this non-standard product shaped representations among consumers and downstream buyers, leading to the categorization of Corsican Clementine as a singular product. In sum, the "work with leaf" both induced and enabled the emergence of an alternative quality model in tension with the competition rules of the citrus sector.

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In the 1980-1990, Corsican Clementine entered a crisis period. Through a modification of the UE phytosanitary rules, Spain obtained the right of marketing its citrus fruits with leaves, and Corsica loss its "leaf monopoly". In this new context, the insular production was increasingly exposed to international competition, and the specificities of both production model and product became economically unsustainable. Some local actors started to align with Spain, adopting controversial innovations such as ethylene degreening, as well as Spanish varieties characterized by high calibre and very early or late fruiting. These technical changes contributed to an erosion of the Corsican model and related quality. During this period, the commercial difficulties and quality heterogeneity stimulated individual strategies. Local actor network became divided, and marketing function was transferred to wholesalers, who put in competition cooperatives and fostered crisis and quality uncertainties (De Sainte Marie and Agostini, 2003).

In the late 1990s, after a large debate within the sector, local actors embarked a PGI certification project as a way to solve crisis with a quality strategy. The PGI was used by local actors as a leverage to operate 3 strategic changes, which have reinforced each other, and contributed to solve quality uncertainties, to restore typicity, and to an increased valorisation of Corsican Clementine. The first strategic change consisted in qualifying and legitimating the full implications of the "work with leaf". At the conclusion of a multi-stakeholders process involving collective learning, controversies resolution, and articulation of expectations, local actors could define product quality, related practices, and control procedures through PGI specifications. The PGI qualified and protected the local harvest model and related quality, despite being in tension with competition rules of mass market. Thus, specifications and controls were focused on preventing degreening hormones, imposing multi-stages harvest, and recognizing "cul-vert", acidulous taste, and small calibre as typicity attributes (mandatory criteria for the use of the protected name).

The second change provoked by the PGI was to stimulate the reconfiguration of the whole actor network involved in quality management. On the one hand, the consensual definition of quality and good practices enabled the concentration of supply around 3 marketing organizations owned by farmers. On the other hand, the PGI acted as a lever for vertical integration of supply chain, since the distribution trademarks aligned their specification sheet with the PGI one, and relied on the 3 marketing organizations as commercial partners. Because the "local norm" became the shared rule system in the supply chain, downstream actors recognized the Corsican Clementine typicity attributes. In this system constrained by fruits' natural colouring, such change in supply chain organization revealed to be highly strategic for quality management.

Last but not least, the PGI contributed to the strengthening of the Corsican Clementine production model and related quality. On the one hand, enforcement of PGI specifications and control device led to an improved management of quality among farmers and sorting stations. Multi stage harvest model was restored, Spanish varieties were replaced by local ones, and fruit quality was homogenized. More indirectly, the coordination of actor network around the local norm allowed an improved management of harvest and marketing, an increased remuneration of farmers for quality fruits, and an improved management of quality at the level of the whole production basin.

DISCUSSION

In the light of MLP-transition framework, these findings suggest that actors used the PGI to strengthen a prior existing socio-technical niche.

During a first period, the leaf monopoly opened a protected space, allowing and fostering the development of an alternative model of harvest and quality – i.e. a sociotechnical niche. The protection mechanism of the niche relied in the leaf, which mitigated tensions with agro industrial supply chains – i.e. the sociotechnical regime.

During the second period, the niche became unprotected due to the loss of leaf monopoly. The niche was therefore destabilized by both exogenous tensions (regime actors sanctioned out-ruling Corsican model) and endogenous tensions (some of the niche actors sought to align with regime).

In the third period, the PGI fostered 3 changes – Local norm elaboration, actor network coordination, and restoration of typicity –, leading to an increased protection of the niche. The new protection mechanisms relied on the management of both exogenous tensions (regime actors aligned with the local norm) and endogenous tensions (niche actors did not anymore align with Spain).

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Can Localised Agri-Food System be a relevant policy to cope with market liberalisation? Evidence from France dairy products market

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***Abstract* – In which way the suppression of milk quotas can affect food chains in France? Are Protected Designation of Origin supply chains more resilient to price shocks? To answer these questions, we compared two contrasted cheese supply chains: Comté and Emmental ones. Comté is a Protected Designation of Origin (PDO) supply chain with a strong and structured collective action whereas Emmental is an industrial cheese supply chain. Using monthly data through January 1996 to December 2009, we found that PDO Comté price is trend stationary whereas Emmental price is difference stationary; suggesting that any shocks will have temporary effects on Comté price whereas effects on Emmental price are permanent. In terms of price volatility, we found that Emmental price is 10-20% more volatile than Comté price.**

***Keywords* – Protected Designation of Origin; French Cheese supply chain; price volatility; market liberalisation.**

INTRODUCTION

In the current context of European Union's Common Agricultural Policy (CAP) reform, in particular with the abolishment of milk quotas and price and storage support, the future of cheese industry in France and Europe represents a challenge for the agricultural sector, agro-food supply chains and public policy makers at regional, national and European levels. Indeed, market liberalisation is likely to increase competition, production and farmers' exposure to price volatility.

The aim of this paper is to measure and compare price volatility in two contrasted cheese supply chains in France,which are Comté and Emmental ones. These two supply chains have opted for twodifferent strategies overtime. Comté supply chain has developed a differentiation strategy based on PDO, whereas Emmental has engaged in a reducing-production-cost strategy.

This latter strategy may be difficult to implement in the context of constantly increasing inputs costs. Since PDO strategy is based on the valorisation of local resources, prices in PDO supply chains are less sensitive to fluctuations at the international level. Secondly, PDO labels split the milk market into high and low quality products; therefore reduce competition between Comtécheese on the one hand and standard imported milk products on the other hand. Finally, even though the milk quotasare abolished at the community level, farmers involved in PDO supply chains are allowed to control their production in order to achieve a better balance of supply and demand (EU regulation n° 2081/92 and CAP 2015).

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DATA AND DESCRIPTIVE STATISTICS

We usemonthly data through January 1996 to December 2009 to estimate price volatility in Comté and Emmental supply chains. Both price series are provided by the Service of Statistics and Prospective of the French Ministry of Agriculture, Food Processing and Forests.

Descriptive statistics of variables are reported in Table I. The price of Comté and Emmental are measured in euros per kilo (€/kg). The price of Comté averaged 5.49 whereas Emmental price is 4.52 in average. The standard deviation of Comté and Emmental are 0.33 and 0.16, respectively.

If one considers standard deviation as a basic measurement of price volatility, we can see that Emmental price is less volatile than Comté one. Yet, this measurement does not take into account the properties of price series, therefore it may induce bias.

Table I. Descriptive statistics of the two price series

Variable	Mean	Std. Dev.	Min	Max
Comté Price	5.49	0.33	4.95	6.59
Emmental Price	4.51	0.16	4.18	5.04

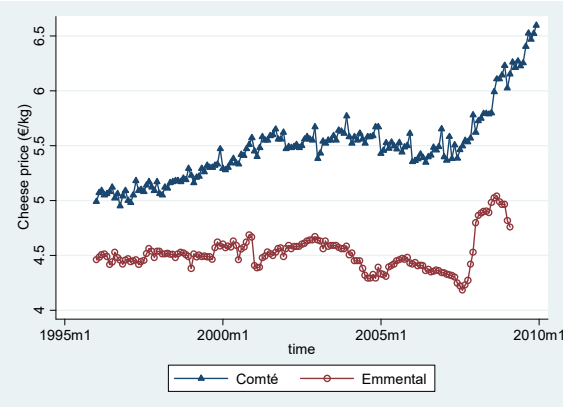

Figure 1: Dynamic of Comté and Emmental prices

Figure 1 displays the evolution of Comté and Emmental prices, over January 2006 to December 2009. As one can see, the difference between PDO Comté and Emmental is high and has been increasing over time. Indeed, in January 1996 the difference was around 0.5 and has increased to reach almost 3 euros in 2009.

METHODOLOGY

Basically, estimating price volatility involves three steps (Moledina et al., 2003). The first step involves performing unit root test to determine whether price

series are stationary or not. The second step involves applying Box-Jenkins approach to find optimal lags of price series that best fits the data. And the final step involves conducing McLeod and Li (1983) procedure to test whether or not price series have Autoregressive Conditional Heteroscedasticity (ARCH) effects or Generalised Autoregressive Conditional Heteroscedasticity (GARCH) ones.

RESULTS

The Augmented Dickey Fuller (ADF) test was performed to test for the presence of unit root(Dickey and Fuller, 1981). The ADF test is used to determine the number of times price series need to be differentiated to make them stationary. It is important to identify whether series are difference stationary (DS) or trend stationary (TS). If series have trend, we shouldremove the trend by using Hodrick-Prescott filter, for instance. If series have no trend, then they are difference stationary meaning that we can stationary the series by computing first difference.

The results of unit root test are reported in Table II. As one can observe, we cannot reject the null hypothesis of unit root for both price series, at 1% level. The ADF unit root test also shows that PDO Comté price is trend stationary whereas Emmental price is difference stationary. This result suggests that any shocks have temporary effects on PDO Comté price whereas they have permanent effects on Emmental price.

Table II. Augmented Dickey Fuller (ADF) test results

Augmented Dickey Fuller statistics		
Variable	Levels	Trend
Comté Price	-1.89*** (0.66)	Yes
Emmental Price	0.38*** (0.80)	No

H0: Presence of unit root
*** Significance at 1%, p>0.001, (.) p values
Yes -means that series have a trend

Next, we apply Box and Jenkins (1976) procedure along with Akaike (AIC) and Schwartz (SBC) information criteria to determine lags of price that best fit series.

We found that Emmental price follows an Autoregressive process of order 1 (AR (1)) whereas Comté price follows an Autoregressive Process Mobile Average of order (3,3) (ARMA (3, 3)). The standard deviation of the residuals of the estimation of AR (1) and ARMA (3, 3) measured the unconditional price volatility for Emmental and Comté, respectively.

Table III. Volatility of Comté and Emmental price series

Series name: Price of	Std. Dev.	Dev. From trend	Uncond. Std. Dev
Comté	0.33	0.07	0.045
Emmental	0.16	0.09	0.053

The results of price volatility estimation are summarised in Table III. The results show that volatility for both Comté and Emmental prices has been reduced by taking into account the predictable components of price, such as inflation or seasonality. However, price volatility remains high in Emmental supply chain compared to Comté one.

Finally, we conducted McLeod and Li (1983) test to assess whether the price volatility is changing over time. The test fails to reject the null hypothesis of no ARCH/GARCH effects for both series, Comté and Emmental, implying that the volatility of Comté and Emmental prices is not changing overtime.

CONCLUDING REMARKS

Using monthly data through January 1996 to December 2009, we found that PDO Comté price is trend stationary whereas Emmental price is difference stationary. This result suggests that shocks have temporary effects on Comté price whereas the effects on Emmental price is permanent. Turning to price volatility, we found that Emmental price is 10-20% more volatile than Comté one.Thus, we conclude that PDO Comté price is more resilient to shocks and less volatile than Emmental one.

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Consumers' buying intention and willingness to pay for PDO and PGI products in large retail chains. Results from a direct survey in Italy

S. Scaramuzzi, G. Belletti, A. Marescotti, E. Del Poggetto, L.Spinicci[1]

***Abstract* – PDO/PGI are rapidly entering the Italian market of large retail chains. PDO/PGI products suffer from the low awareness of this labeling scheme among consumers. In this background, the aim of this paper is to analyze howdifferent levels of knowledge of PDO and PGI marks affect consumer behaviour, with particular reference to his buying intention (BI) and willingness to pay (WTP) within large scale distribution. The hypotheses of the research framework were identified through the analysis of the results of the scarce existing literature on PDO/PGI consumer behaviour. The hypotheses have then been tested on a sample of 250 consumers, through a direct survey carried out in 2015 in Central Italy, within two major Italian retailing companies: COOP and Esselunga. The empirical analysis confirms the poor knowledge of consumers of EU PDO/PGIs. The level of information affects consumers' BI and WTP a premium price for PDO/PGI products, which increases though not significantly when consumers have knowledge of the certification labelling scheme.**

***Keywords* - PDO/PGI, buying intention, willingness to pay**

THE INFLUENCE OF PDO/PGIS ON CONSUMER'S BUYING INTENTION AND WILLINGNESS TO PAY

The importance of certified products is growing worldwide, as demonstrated by recent empirical surveys. In 2013 theturnover of the sector was estimated in 6,6 billions euros at production level in Italy, and a consumer value of 13,2 billions euros of which 8,9 marketed in Italy (Ismea, 2014).

Certification systems represent a chance for farmers to improve their competitiveness on the market. From this point of view PDO/PGI marks are used to differentiate the production and create value through the reference to the origin, thus representing a quality guarantee for consumers. In addition PDO/PGI certifications reduce the time consumers have to spend to search information as *experience attributes* are transformed into *search attributes*. In this way consumers may solve the information asymmetry problems about the origin of the product and its characteristics (Dimara, Skuras, 2005).

Many authors found that the quality perceived and associated by consumers to an origin-linked intrinsic attributes has a significant and positive influence on their Buying Intention (BI). The buying intention can be defined as a future projection of consumer behaviour in his shopping process (Fandos, Flaviàn, 2006).

Others also proved that GIs increase consumers' Willingness To Pay (WTP) thanks to the guarantee the GI assures(Deselnicuetalii, 2013). Both BI and WTP are linked to the knowledge level of consumers of the PDO/PGI certification system on one side and of the different products covered by the PDO/PGI scheme on the other side(Profeta et alii, 2012).

Unfortunately PDO/PGIsare often subjected to misunderstandings and generalizations that don't let them work efficiently as a quality indicator. This situation is caused by a sporadic and confuse information among consumers. Actually despite a recognition of an added value to origin products consumers are not always able to identify and distinguish them on the market.

RESEARCH QUESTIONS AND METHODOLOGY

The aims of the present research work are:
- to demonstrate the poor information among consumers about the PDO/PGI certification system, in terms of EU logo and its discipline (presence of code of rules and characteristics of the legal protection) and in terms of capacity to identifyproducts covered by this labelling scheme.
- to highlight the effect of consumers' knowledge on their BI and WTP.

The hypotheses have been tested on a random sample of 250 consumers through a direct survey in two major Italian retailing companies: Esselunga and Coop.

The questionnaire was semi-structured with closed and open questions in order to maximize the amount of information. As for the socio-economic characteristics of the sample: out of the 250 interviewees 137 were women and 113 are men; 124 consumers belonged to the 18-35 age level, 96 to the 36-60 age interval and 30 consumers were more than 60 years old. The respondents mainly had amonthly family income of more than € 2,500. 112 respondents had a university degree and 95 have a high school diploma.

RESULTS AND DISCUSSION

The knowledge of the EU certification labels has been analysed through two items: the meaning of PDO and PGI labelling scheme and the ability of the consumer to list some examples of PDO/PGI products. The empirical analysis confirmed how GIs are often subject to misunderstandings and misinterpretations and how Italian consumers are substantially not able to state a definition of EU PDO/PGIs.

In fact, only 24% of the sample was able to define what EU designations of origin are in a complete and correct way; many consumers associated PDO/PGIs logos meanings to different certification schemes (organic, fair trade, etc), or when asked to indicate the

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name of a PDO/PGI product tried to limit the margin of error mentioning only some product categories (cheese, cold cuts, fruits).

On the basis of the different levels of knowledge of the EU certification labels we have identified 6 types of consumers and have tagged them with a specific name. The categories have been identified through a matrix where two main variables are taken into consideration: the knowledge of the PDO/PGI definition and the capacity to associate the PDO/PGI to the name of a labelled product.

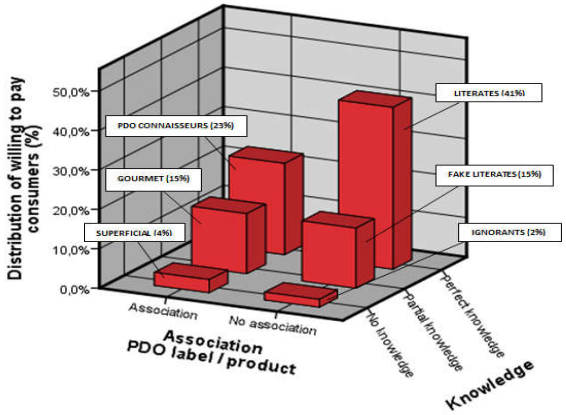
Table 1 Categorisation of consumers by knowledge of EU PDO/PGIs

		PDO/PGIMEANING		
		No knowledge	*Partialknowledge*	*Perfect knowledge*
CAPACITY TO ASSOCIATE THE PDO/PGI TO A LABELLED PRODUCT	*No association*	**IGNORANTS** *(13%)*	**FAKE LITERATES** *(12%)*	**LITERATES** *(35%)*
	Association	**SUPERFICIALLY INFORMED** *(5%)*	**GOURMET** *(11%)*	**CONNAISSEURS** *(24%)*

Source: our elaboration on direct survey

The survey showed how the level of knowledge can affect consumers' BI and WTP. In particular, 60% of the respondents were willing to buy and pay more for a PDO/PGI product. They were mainly represented by those who have a strong knowledge of EU quality certification, that is Literates (41%) and *Connaisseurs* (23%). On the contrary, the highest percentage of consumers unwilling to buy and pay a premium price for PDO/PGI products was represented by the group "Ignorants" (31%).

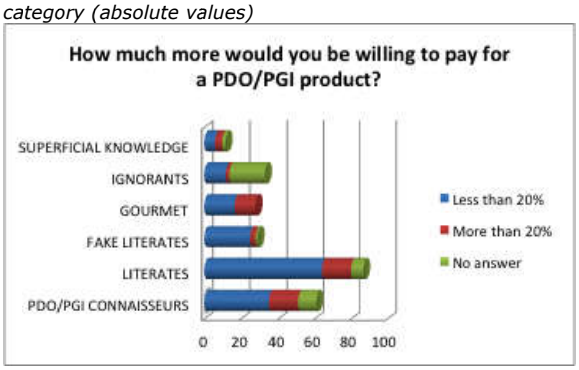
Figure1 – Consumers willingness to pay for a PDO/PGI product by knowledge category



Source: our elaboration on direct survey

The quantification of the premium price also confirms the influence of consumers' knowledge and awareness on their willingness to pay for a PDO/PGI product. Fig.2 shows that more than 50% of each group, except the "Ignorants" (where blank answers prevail), would not pay more than 20% of the initial price for a PDO/PGI product. The highest percentage of consumers who affirmed that they would be willing to pay more than 20% belongs to the "gourmet" group, followed by "PDO connaisseurs" and "the literates".

Figure2 - Premium price for a PDO/PGI product by knowledge category (absolute values)



Source: our elaboration on direct survey

CONCLUSIONS

The empirical analysis confirms the poor and very differentiated knowledge of consumers of EU PDO/PGIs. Consumers' awareness strongly affects their BI and WTP a premium price for PDO/PGI products. Nonetheless only 20,8% of the consumers would be willing to pay more than 20% of the price of a similar product without PDO/PGI. This ratio goes up to 39,3% for gourmet consumers.

The study sheds light on the importance of taking sound action towards retailers in terms of in store marketing (in store communication, layout, pricing and use of private labels) and for collective (Consortia and producers' Associations) and public policy action to raise consumers awareness about the meaning of the PDO and PGI labelling scheme, thus leading to a higher acceptance of their price differential and increase their consumption.

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Impact of Spanish big retailers strategies on Protected Designations of Origin of extra virgin olive

M. David García-Brenes, Javier Sanz-Cañada[1]

***Abstract* – Olive oil has traditionally been marketed in Spain, and as in many of the producing countries of the Mediterranean Basin, as a commodity good, except for some Italian and French regions where it is recognized by some segments of consumers as a differentiated good. Policies undertaken by abnormally low prices of the mass distribution firms have been used to increase the ability to attract consumers to the business signs. These strategies are based on using olive oil as an appealing product. This work aims at a comparative study of the pricing policy of the Retail distribution with average prices received by producers for the past two harvests, and analyse the effects on the valorisation of olive-oils with protected designations of origin. This retail distribution strategy extends back along the whole olive oil chain and especially to the producers, as the weakest link in the chain, who suffer the worst consequences of this general lack of profitability. As negative side effect, these retail strategies contribute to trivialize the consumer perception of olive oil as an undifferentiated product. This seriously damage the collective strategies based on distinctive signs of differential quality associated with territory, and in particular Protected designation of origin extra-virgin olive-oils.**

***Keywords* - Olive oil, quality brands, retail distribution, PDO**

INTRODUCTION

The long tradition of considering the good olive oil in most producer countries of the Mediterranean Basin as an undifferentiated product has undoubtedly influenced still the way the extra virgin olive is currently produced by the mills which continue selling mainly in bulk to the bottling-refining industry. Thus, despite the numerous efforts by the producer sector to market differentiated olive oil quality from the origin mark, the local brand packaging oil reaches only assume 10% of the total in the most favorable cases. This dynamic is seriously damaging actions of the producer sector that makes an extra virgin olive oil exceptional and markets with Protected Designation of Origin.

The continuing shift in bargaining power relations which have taken place in the Spanish Agrifood System since the eighties, has meant that today the big distribution control the food chain and in particular for the olive oil. According to Alimarket (2005), brands the distribution and the first four packers groups (DEOLEO, Ybarra, Acesur and Borges) accounted in 2014 for 91.2% of the volume of oil sold at freeservice establishments in Spain.

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In Table 1 we can see that the supermarket chains in 2013 accounted for 55.6% of total sales of extra virgin olive, while 30.7% of hypermarkets. Therefore, the free - distribution service accounted for 86.3% share, while the other channels, such as traditional stops (2.3%) or cooperatives (2.2%) had a low participation.

Table 1. Retail distribution of extra virgin olive conventional in Spain. 2013

Retail	Share of the total value (%)
Supermarkets	55,6
Hypermarkets	30,7
Traditional shops	2,3
Cooperatives	2,2
Others	9,2
Total	100,0

Source: Ministry of Agriculture, Food and Environment(2015 a)

Olive oil, as well as being commercially majority treated as an undifferentiated good, is part of the staple diet of Spanish consumers, because it owns the basic conditions to be considered as an "appealing" product by the big distribution which applies very low or no margins that are made up for by much higher margins on other products.

This essay aims at the comparative study of the pricing policy that maintains the big distribution with the prices perceived by the producers (farmers) in the past two harvests and analyze its effects on recovery actions of the extra virgin olive with denomination of protected origin undertaken by the producer sector. The main purpose of this paper is to demonstrate that big retailers sell much cheaper extra virgin olive than extra virgin olive with Protected Designation of Origin (PDO) and this strategy seriously damage the profitability of producers and their actions to achieve excellence in extra virgin olive.

Some jobs that have used the strategy of the big Spanish Distribution olive oil to set a very competitive price to attract their clientele are Rebollo (1993) and Garcia (2006), while Garcia and Sanz (2012) and Sanz et al.(2014) have studied the value chain in PDO olive oil. Among the most important contributions of this essay is to identify the impact of the big distribution strategy on olive oil PDO and proposals to correct them.

METHODS

Spain has issued a series of studies that estimate the profitability of the entire value chain of olive oil in Spain (AEMO, 2010 and 2012; Junta de Andalucia, 2010; MARM, 2010). They all agree that there are some fairly tight profit margins in all phases of the value chain but especially producers. Sanz Cañada et al. (2014) analyzed for different types of olives and PDO of the province of Jaen (main producing area of

Spain) and have found that a large part of the surface and producers have a negative private profitability which is maintained with subsidies of the Common Agricultural Policy (CAP), the family labor and income from other activities.

If the price variable is the main manifestation of the strategies of the big commercial distribution of the olive oil sector in general and in particular PDO, we can compare prices at source (at the exit of the mills) and destination (Price Public sale) category of extra virgin olive oil in the previous and current harvest (October-February) in a saving format (5 liters). For this we take the average price of extra virgin olive oil in the Poolred system which is a benchmark of the main operations for the sale of bulk olive oil producers in Spain, and we compare with the average price three brands of oil distributor in Spain (Carrefour, Auchan and Hacendado) and the brands of two trading companies with high attachment to territory Oleoestepa PDO Estepa (Sevilla) and Olivar de Segura PDO Sierra de Segura (Jaen).

Prices for these brands were achieved by asking at the magazine Mercacei, which is a trade publication that tracks of consumer prices for the different types of oil and retail formats in Spain. It is important to consider that seventeen observations were taken for both sale prices of oil source to each destination price, that is, the three brands of the big distribution and the two brands with PDO

RESULTS

The comparative analysis of prices in the 2013/014 harvest begins, where the average price of oil sold under private label brands ranged from 2.53 € /l. (Carrefour) and 2.68 €/l. (Auchan), while the oil with PDO label ranged from 3.46€ /l. (Oleoestepa) and 3.57 € /l. (Olivar de Segura). If we add the average price in origin (2.06 €/ l.) average costs of packaging and commercial structure (0.41€/l.) and linear logistic costs, it appears that the profitability of the brands distributor was almost zero in the harvest. In the last harvest 2014/15 there has been a drastic fall in the production of olive oil in Spain: 807.3 thousand tonnes compared to 1781.5 thousand tons in the previous harvest (MAGRAMA, 2015 b). This has led to a significant increase in the average price in origin of extra virgin olive oil from 2.06 € / l. in the previous harvest to the € 2.80 / l. currently. However, what is particularly striking is that the average prices of the three private label brands are below average prices in origin (2,8 € / l.): 2.27 € / l. of Carrefour, 2.53 € / l. Auchan and 2.74 € / l. Hacendado and the price of oil with PDO brands: 3.51€ / l. of Oleoestepa and 3.10 € /l. of Olivar de Segura. Se certainly is a situation with sales losse.

The position of dominance of the big distribution in the food chain determines that this low price policy extends backward along the entire oil chain, which seriously undermines the profitability of producers and especially those located in mountainous territories by low yields and high costs but an oil with high organoleptic typicality. In addition, most of these producers are related to a differential quality PDO strategy, which means that the strategy of the big distribution of these actions harms the local producers.

Another negative side effect is that these business strategies contribute to trivialize the perception that the consumer has of olive oil an undifferentiated product, hampering efforts and investment of the producer sector in order to boost local strategies of oil quality and differentiation and enhance this product, too.

In addition, the strategies of big distribution do not favour the role that has developed the Regulatory Boards of PDO olive oil by spreading a code of good environmental and agro-industrial practices which benefit the processes of Rural Development in these territories.

Looking ahead, it is essential that defense mechanisms of competition by the National Commission of Markets and Competition (NCMC) in Spain and the Autonomous Regions work more effectively to control the impact of the big distribution strategies on olive oil in general and PDO in particular. In addition, public authorities in collaboration with the Regulatory Boards should insist on a training work of consumers to spread the oil with PDO which is a product that incorporates a differential attributed quality (health, food safety, etc.) which would favour the increased consumption.

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Branding products initiatives in LDCs trough GIs: the case of the Kampot Pepper in Cambodia and the Harenna Coffe in Ethiopia

Stefano Inama[1]

***Abstract* – Adopting a branding strategy based on GIs could be a viable complementary poverty reduction and environmentally sound policy to commercial and subsistence farming in Least Developed Countries (LDCs).Yet, not all LDCs countries have adopted such policy using GIs.This paper presents concrete evidence drawing from two case studies and two different policies adopted from the respective Governments: (a) The Cambodian pepper from the Kampot region, and (b) the Ethiopian coffee from Dallo Mena. The paper briefly depictsthe comparative experiences of these two Governments, donors and their rural communities in promoting a branding of their local products.**

***Keywords* – Geographical Indications, Rural Development, Least Developed Countries.**

INTRODUCTION

Countries in the developing world face considerable challenges when they consider GIs as a tool to promote their products. GI legislation might not exist or if available, is incomplete.Moreover, it is necessary to have a careful look at competing form of promotion and protection such trade marks and/or other means of promotion such as "organic" and "fair trade". There is a lot of confusion in in the developing world and especially in LDCs generated by lack of knowledge or biased information among the kind of protection and promotion available for local food products. Biénabe and Marie-Vivien (2015) argue that the State should define their own institutional frameworks and set the conditions for establishing GIs to better tailor them to the local context (e.g., including heritage-based reputation) and in that way promote a development from within (Mengistie 2012; Bowen 2010).The paper draws some initial lessons learned from Ethiopia that initially relied on trade mark protection for the protection and promotion of its coffee and Cambodia that adopted a GI legislation to promote local products.

AIMS AND METHODOLOGY

UNCTAD argues that LDCs Governments have limited knowledge of the possibilities of branding rural products through GIs or other forms of promotion. The message from donors and consumers is mixed. Besides Southern Europe the culture of sustainable models of branding agricultural products relying on "terroir" is absent or it is mixed with other models of IP protection such as trade marks or development farming like organic farming or "fair trade" initiatives. These latter initiatives are not directed at promoting the uniqueness nature of products and the cultural aspect of a GI.

Development aid for LDC has yet to support branding initiatives for products of LDcs in a systemic manner. UNCTAD and FAO have carried technical cooperation activities to support rural producers to promote their product trough GIs. An UNCTAD study carried out by Marie-Vivien and Chabrol (2014) showed poten¬tial GI-products in countries such as Cambodia, Laos, Ethiopia, Indonesia, Mauritania and Vietnam.

This paper aims to present two cases for building GIs under different policies choices adopted by the Government of Cambodia and Ethiopia. The selected case studies are the Cambodian Kampot pepper from the kampot region and the EthiopiaHarenna wild Coffee). The author collected data through field visits and joint activities with the producers and the Governments, interviews, secondary sources (e.g., reports) and literature review.

RESULTS

THE CAMBODIAN PEPPER FROM THE KAMPOT REGION

The Government of Cambodia supported by donors, namely by the by the AgenceFrançaise de Développement has adopted a GI legislation contained in the "Prakas on the Procedures for the Registration and Protection of Marks of Goods, No. 105 MOC/SM 2009.

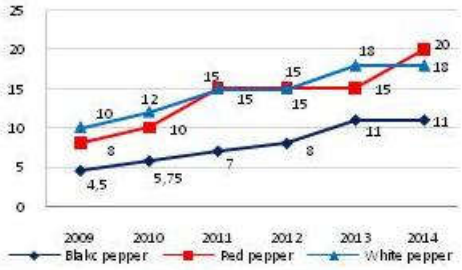

Figure 1. Price of the Kampot Pepper from 2009 to 2014

In Cambodia, the use of GIs provided recognition and reputation to the Kampot pepper and palm sugar, whose prices have been significantly impacted (see Figure 1).

Building upon this success story, in 2014, UNCTAD conducted field investigations in collaboration with the competent authorities to identify additional potential candidates for GI denomination. Findings reported to the Senior Minister of the Ministry of Commerce stated:"*The provision of GI registration will make the most of this potential for the benefit of rural communities and producers in this context of globalization. It will also help prevent usurpation and*

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imitations, which can arise where a good reputation is involved. It is therefore absolutely essential that Cambodian producers take advantage of this opportunity, given the number and quality of products available in Cambodian's rural communities"

The precondition for this expansion of GIs and protection of the current one consists in the capacity - in terms of both institutional and human capacity building - to manage the GIs system according to international standards and regulatory requirements.

THE ETHIOPIAN COFEE FROM THE HARENNA FOREST

Ethiopia is considered to be the oldest exporter of coffee(Petit 2007). These facts indicate the importance of coffee as a commodity, but do not adequately reflect its immense cultural and social significance for Ethiopians (Sereke-Brhan 2010). In 2004 the Government launched the initiative to register trademarks for Ethiopia's fine coffees. The Government has filled trademark applications in over 30 countries including the United States and the EU for Harrar, Sidamo and Yirgacheffe (coffee-growing regions)" (Teuber 2011). However, this situation shows lack of visibility of farmers and their collective action experiences (Hughes 2009).

In order to reverse such lack of visibility and scarce participation of farmers in using trade marks for the promotion of local coffee, there are attempts by the Government recorded during an UNCTAD mission carried out in October 2014 to design a national GI legislation and most importantly to consider GIs as a tool to promote local products including coffee.

The possible socio economic effects of GIs was explained at a workshop held by UNCTAD and Slowfoodwith localcommunitiesharvesting the Harennacoffe in the Dallo Mena, Bale Mountains National Park The Harenna wild forest coffee is spontaneous or garden-coffee (smallholders planting 1-2 ha using forest seedlings and a low input farming system). Coffee management is therefore minimal, with coffee generally grown under tree/forest canopies with little pruning, field hygiene, or stumping.

As acomparative experience the prompt registration process of Café de Colombia Protected Geographical Indication in the EU, from 2005 to 2007, was possible due to the long coffee tradition and the existing institutional framework coffee growers since 1927. Today, the Federación comprises more than 500,000 producers and quality standards have been im-proved. Café de Colombia GI registration as well as the experience of Cambodia provides a series of reflections that could be studied by the Ethiopian Government in introducing GI legislation to promote local products and especially coffee

Finally, all efforts by State and involved GI actors for implementing GIs can be diluted if green coffee is mainly exported and because of the dependence on international coffee roasters or brand owners who blend the coffee in the North, the promotion of B2B (e.g., partnerships, gaining value along the supply chain) between coffee producers in the South and coffee buyers in the North should be persistently pursued (Muradian and Pelupessy 2005).

CONCLUSION

The comparative experience of Cambodia and Ethiopia in promoting their local products trough Intellectual property tools offer a number of reflections and policy options for developing countries and LDCs that are just beginning or are embarking on the route to promote their products .The experience of UNCTAD shows that LDCs products need recognition of their existence from bottom-up collective action from donors rather than just been told to comply with SPS , voluntary standard, organic requirements to gain market access in lucrative markets. Such conditions may be surely a prerequisite but they are not the appropriate tools to brand the uniqueness of their products. Adopting a branding strategy based on GIs could be a viable complementary poverty reduction and environmentally sound policy to commercial and subsistence farming.

This paper provided some initial evidence and arguments to further advocate to Donors, development partners, LDCs governments to mature a modern view on agriculture farming, and to adopt GIs to as a tool to promote a culture of value added to the existing "terroirs" in LDCs.UNCTAD with FAO and other UN agencies and actors will continue to explore such policy options for LDCs.

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Essential Packaging for Appellations of Origin

Tobias Eisenring, Erik Thévenod-Mottet[1]

***Abstract* – There is an abundant literature on the effects of the protection of geographical indications, that process being considered as a norm-setting of the product, a collective organization and a marketing strategy. The effects of such initiatives, based on the mandatory code of practice, can be traced in the social, economic and environmental dimensions. This paper focuses on a specific kind of appellations of origin, where the final product is composed of two or three elements or ingredients, therefore potentially involving two or more supply-chains. The mandatory use and the geographical origin of these elements are debated. We analyse the various current situations for some PDOs and the lack of conceptual coherence in this regard.**
***Keywords* – PDO, supply-chain, packaging**

INTRODUCTION

In this paper, we focus on composite GI products, that is to say products that involve distinct supply-chains providing different elements of the final product, or elements requested for the consumption of the final product. There are specific stakes in associating several supply-chains, generally two or three, participating equally to the local characteristics of the final product. Most of these cases are related to dedicated packages which confer a particular quality to the final product. In other words, the product would not be the same without that package or the package is not only a package, but also an ingredient of the final product.

Our analysis is mainly based on the case of the Bocadillo veleño, a fruit paste from the region of Vélez in Colombia, made from guava, wrapped in dried bijaoleaves and traditionally packed in wooden boxes. This product is currently being considered for registration as a PDO. Other examples are, in Europe, the Vacherin Mont-d'Or PDO cheese (Switzerland) and the Mont-d'Or PDO cheese (France), wrapped in a wooden ring and packed in a wooden box, as well as the Banon PDO cheese (France), wrapped in chestnut leaves, the Sainte-Maure-de-Touraine PDO cheese (France) with its rye straw, and the Livarot PDO cheese (France), which is circled with five strips of rush. A close case is the Tête-de-Moine PDO cheese (Switzerland), whose con-sumption requires a specific tool which became a distinctive feature of that product.

Our aim is to identify the specific stakes on these composite products, such as the historical and functional importance of the different "packaging ingredients" of the final product, collaboration among the different actors along the value chain and (re-)distribution of the added value and power among them, and local sourcing of the packaging elements, i.e. in regard to the management of the local resources and sustainability of the PDO as such.

METHODS

The information related to the case of Bocadillo veleño was collected thanks to a Swiss technical cooperation project on Intellectual Property with Colombia (COLIPRI, 2013-2016), financed by the Swiss State Secretariat for Economic Affairs(SECO) and implemented by the Swiss Federal Institute of Intellectual Property (IPI). Additional information on comparable cases was collected through documentary research and interviews.

THE COMPOSITE NATURE IN QUESTION

The use of vegetable leaves and wooden boxes to wrap and pack foodstuffs is very ancient, and used to be very common before the introduction of plastic and cellophane. Similarly, a debate occurred, in several cases of GI products, on the impacts of the replacement of natural (mostly wooden) tools and structures by steel or plastic ones. These debates oscillate between concerns about the specific quality (influence on taste) of these products and about hygienic rules as well as modernization of the processes. As an example, in the case of the French cheese PDO Salers, registered in 1961, the use of traditional wooden vats for the processing of the milk was made mandatory in 2000. A controversy then occurred within the PDO supply-chain and be-tween public authorities, which has not yet been definitely resolved (Bérard& Montel, 2012). Nevertheless, Lortal et al. (2014) estimate that 500'000 tons/year of cheese are ripened on wooden shelves in Europe, justifying numerous recent researches to better understand the influence of wooden tools on cheese production, which broadly support the maintaining of these methods in a traditional context.

The geographical source of wooden vats and shelves, and the related local know-how,merit some enquiry when considering the origin products they contribute to characterize. This question is, of course, even more relevant for the productswhere natural elements are not only involved in the production process but are incorporated into the final product. The basic problem is, nevertheless, the same: in most of the cases considered in this paper, there is or used to be a trend to skip the original element that was once associated with the authenticity of the product, or to replace it by a non natu-ralmaterial, less costly, supposedly more hygienic and, above all, easier to get from a generic (non local) supplier. As examples, for Livarot and Bocadillo veleño, the economic trend would be to replace the natural rushes and leaves by plastic resembling stripes and sheets, whose role is then restricted to a decorative one. The case of the Vacherin Mont-d'Orwooden box is an exception, as the dairies always had an important incentive to keep it because it is weighed together with the cheese itself, when being sold.

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BALANCE OF POWER BETWEEN SUPPLY-CHAINS

A usual trend for the final producers of the GI product is to get rid of any dependence from the suppliers of the raw materials, be it the main raw material or the additional component, and to retain the highest share of the final added-value.

In the case of the French Mont-d'Or PDO, there is anon-going debate regarding the mandatory geographical source of the wooden ring. The cheese-makerswant to be free to get these rings from abroad at a lower cost than the local providers can offer, and it seems that the PDO specification allows this. On the contrary, after similar debates related to the geographical source of the wooden boxes for the Swiss Vacherin Mont-d'Or PDO were cut by the strict position of the ministry of agriculture, the interprofessional organisation now insert messages on the local source of these boxes in its advertising.

There are two questions to be addressed by the actors of these GI systems: 1) should it be mandatory (or, on the contrary, should it be even authorized) to use natural materials for the processing and the packaging of the product?, and 2) if that is the case, should these tools or materials originate in a defined geographical area (presumably, the same area as the one where the final product must be processed)? Our research shows that there is a variety of answers brought by different GI systems, from vertical integration to the absence of any legal requirement in that respect.

In the case of Bocadillo veleño, the debate is still open, as the application for registration as an appellation of origin is being prepared. About 600 peasant families produce the bijao plant leaves that are used to wrap the sweet, compared to the 130 processors of bocadillo guava paste. But the share of bocadillos that are wrapped in natural leaves is only about 60%. The share of bocadillos packed in wooden boxes is much lower, about 3% of the total production. In the paper, we analyse this situation with detailed data and through different scenarios.

COMPOSING WITH THE COMPOSITE

The sanitary issues that have arisen in relation to the use of natural materials have been shown to be unfounded. It has been demonstrated that these materials are not only biologically innocuous when treated adequately, but are also useful for controlling bacteriological hazards, e. g. for raw milk cheeses, in addition to their influence on the taste of the final products. The main issue is related to the costs: as their preparation and use require manual work, they are more costly in time and money than the artificial substitutes. Moreover, if the sourcing of these natural materials is limited to a defined geographical area, in particular where there is only a few local suppliers, then the processors may be reluctant to accept that dependence, since they already depend on the local suppliers of the principal raw material.

Hence, the role of these natural materials in the success of the composite GI products on the market is often crucial, playing on various grounds: a specific taste, a distinctive appearance, a tangible proof of handicraft quality and a more intense evocation of the terroir and its landscape and traditions. A good positioning on these grounds, that could be summarized as authentic and differentiatedquality, is clearly identified by various scientists (see Barjolle and Sylvander, 2002) as a major factor of success for GI schemes.

Moreover, the traditional natural materialscan significantly contribute to the enforcement of the legal protection of a GI. First, thanks to the distinctive feature they confer to the product: either the imitators cannot afford to use the same materials for technological and/or economic reasons, or they face the risk of being accused ofmisleading consumers. Secondly, as traceability marks facilitating the quantitative monitoring and the identification of the producers. In the case of Sainte-Maure-de-Touraine PDO, the rye straw serves as an identifier of the original product, in comparison to the numerous generic Sainte-Maure cheeses, as well as a traceability and control mark thanks to the dairy identification number put on each straw by a laser printer.

When the GI producers agree on the mandatory use of natural materials and on their mandatory local sourcing, then it is likely that GI scheme can achieve a higher degree of local development.

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Questioning on collective action to qualify a GI: the case of Picinisco PDO cheese

Vecchio, Y., De Rosa, M., Bartoli, L.[1]

***Abstract* – This paper aims at analyzing a collective action behind the procedures for the recognition of a geographical indication. More precisely, by applying an innovative structure-conduct-performance paradigm applied to GI, the paper focuses on a specific product in region Lazio (Italy). The applied methodology lets limits and obstacles of collective action to emerge.**
***Keywords* – collective action, geographical indication, Pecorino di Picinisco cheese.**

INTRODUCTION

The object of the paper is the analysis of collective action within a Geographical Indication (GI) strategy. The paper aims at investigating the working mechanisms and rules behind the building process of a GI: more precisely, it tries to show how a regressive localism and an institutional underdevelopment may threaten the qualification process.We put forward the Ostrom's (2010) approach to collective action and we apply it to a case-study, the Pecorino di Picinisco cheese in the region Lazio (Italy).

As pointed out by Meinzen-Dick et al. (2004), there are three major problems that researchers encounter studying collective strategies: a) the first one concerns conceptualizing collective action; collective action can be defined as voluntary action taken by a group of members to achieve common interests (Marshall, 1998).The collective action enable the local community to gain immaterial resources, like information, trust, networks aimed at innovation, etc. b) The second problem is developing an analytical framework for studying collective action: Meinzen-Dick et al. (2004) refer to the structure-conduct-performance paradigm, in order to underline the need for comprehending the determinants variables influencing the structure of the group and, as a consequence, its conduct and the outcomes of the collective action. c) The third aspect is operationalizing the framework for empirical research: to operationalize SCP paradigm, in analysis of the structure section we make reference to a recent paper Ostrom (2010) who underlines seven variables predicting to affect the likelihood of collective action:

a. Number of participants involved; as known, the raise of the number of participants reduces the odds of cooperation, due to the possibility of free riding.
b. Subtractability of the benefits from collective action. This means that the benefits should be shared among the participants of the group. More cooperation may emerge in cases of public goods.
c. Heterogeneity of participants. The more heterogeneous is the basis of the group, the more difficult is to set up a convergent strategy aimed at qualifying a GI. As underlined by Vanni (2014), the appropriateness and homogeneity of the group should foster social relations and, as a consequence, collective action.
d. Face-to-face communication lets the trust to emerge and foster relational assets.
e. Information about past actions that contribute to the individuals' reputation.
f. Links among individuals and external actors influence collective action, thanks to the working of bridging, bonding and linking capital (Angeon, 2008).
g. Voluntary entry/exit; in cases of easier withdrawal higher levels of cooperation may emerge.

As far as *conduct* is concerned, we have investigated the rate of adhesion to the PDO and the motivation for adhering/not adhering to the collective mark. Finally, to examine the *performance* phase, we put forward a gap analysis theorized by Belletti and Marescotti (2011) to compare: a) desired effects (DE),which express stakeholder motivations (both local public institutions and private actors and firms) for the registration of the GI; in case of a GI, the desired effects are synthesizedby a collective territorial marketing strategy; b) expected effects (EE), that is effects reasonably expected by the GI registration; collective marketing initiatives based on the GI product are the result of the expected effects; c) actual effects (AE)monitored in the field. By following a subjective method of evaluation (Belletti, Marescotti, 2011), three indexes have been implemented:

- $^{AE}/_{DE}$ = effectiveness index
- $^{EE}/_{DE}$ = coherence index
- $^{AE}/_{DE}$ = efficiency index

Our case-study refers to the PDO Pecorino di Picinisco, a typical cheese from the Comino Valley in the region Lazio (Italy).Data collected comes from a semi-structured questionnaire we have submitted to a sample of farms working within the PDO area.

RESULTS

STRUCTURE

Results have been processed according to each of Ostrom's variables:

1. Number of participants

According to the last census of the Italian agriculture, in the area there are 96 sheep farms and 44 goat farms, 15 cheese factories, each factory managingits own breeding. The first meeting to join producers in a consortium for cheese valorization involved 30 producers. However, after the first "enthusiastic" period, a reduced degree of participation has been emerging. As a matter of fact, actually, only two farms have signed the adhesion to the consortium and accepted the compulsory norms of production foreseen in the code of practices.

2. Whether benefits are subtractive or fully shared. The relatively homogeneous type of farming activity

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implies a potential equal horizontal and vertical distribution of benefits. The real problem is due to the low perception of the advantages of the geographical indications on behalf of the majority of local producers.

3.Heterogeneity of participants

The localized productive system of Pecorino di Picinisco cheese is made up of homogeneous small-medium sized sheep and goat farms. The medium size emerged from the analysis is 532. The homogeneity of the productive system raises the probability to stimulate a collective action.

4.Face-to-face communication

Relational assets are adding up to trust formation and collective action are poorly developed in the area: thus, face-to-face communications are poor and weak (not strong in Granovetter's sense!) ties characterize local relations.

5.Information about past action

Another obstacle to collective action concerns the eventual farmers' bad reputation in account of past actions: overall, past action does not seem to have engendered a negative influence on collective action; however, few cases of disputation among the farmers are in progress with possible negative effects on the probability of collective action.

6.How individuals are linked

It is critical to understand how individuals are linked to each other: the aforementionedtypes of connectionsare identified:

6.1 Bonding ties

Family connections are really strong. Bonding ties influence both production and socialization spaces: as far as production space is concerned, farms declare to have learnt breeding and cheese making within the family tradition.

6.2 Bridging ties

Bridging ties were very weak. A climate of strong competition does not stimulate links among local actors. This hamper the development of producers associations: as a matter of fact, farmers refused to build up a cooperative of local producers and cheese makers because each farmer has his own "style" of breeding and producing.

6.3 Linking ties

Institutions have tried to link local farms with the institutional sectors, without success: due to past negative experiences, the propensity of activating relations with institutional sectors is really low.

7.Whether individuals can enter or exit voluntarily.

Entry barriers are mainly represented by the costs of compliance with Pdo mark.The most significant cost to be sustained on behalf of farmers is related to the observance of hygienic and sanitary standards which may induce a structural adjustment with high financial exposure. Other entry barriers are the high costs to buy new farmland.

CONDUCT

The analysis of the structure phase show the lack of collective action, according to the 7 variables considered. Therefore, individual action replaces collective action.

PERFORMANCE

The three indexes synthesizing the performance phase are not encouraging, due to the prevalence of individual strategies and the absence of collective action. More precisely:

- $^{AE}/_{DE}$ = individual marketing strategies / territorial marketing strategies.
- $^{EE}/_{DE}$ = collective marketing initiatives / territorial marketing initiatives
- $^{AE}/_{DE}$ = individual marketing strategies / collective marketing strategies.

CONCLUSIONS

Our methodological proposal has enlightened the main obstacles to the promotion of an effective collective action: the SCP paradigm has revealed its efficacy explaining the actual impasse to the collective strategy behind the Pecorino di Picinisco Pdo cheese; therefore, it could be a useful tool of analysis to be replicated in other context characterised by the presence of GI.

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The public policies in favor of Geographical Indications in Morocco: Mental models, appropriation by the actors, and impact on innovation and local dynamics

Jean-Paul Dubeuf[1]

***Abstract* – The governance and efficiency of the public Policy in favour of the Geographical Indications (GI) in Morocco are analyzed. The GIs in Morocco are said to be promoted for creating value and fighting poverty in rural back countries. From the certification projects in two Northern and South Western regions, the reports of several participative workshops and individual interviews, they appear to be more an official communication support of image than an operational tool of development. Considered as "modern" innovations by themselves and generally top – down administrative initiatives, the GI projects have difficulties to be understood by the professional actors and are little connected to specific and realistic economic local economic objectives and changes in urban demand. Including the GIs in a broader discussion on the general governance of 2nd Pillar of the Green Moroccan project is one of the proposed suggestions.**

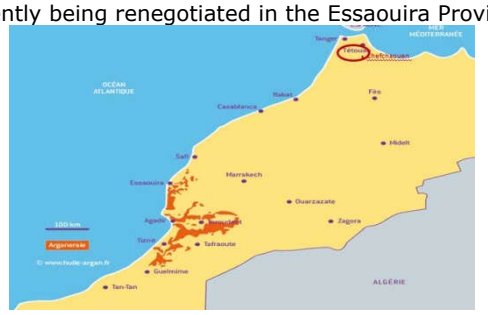
***Keywords* – Rural Development, Public Policies, Morocco, Geographical Indications, Governance, Mental models.**

INTRODUCTION, OBJECTIVES AND METHOD

The Public Authorities in Morocco have been developing for several years an incentive policy to develop geographical indications, promote local "terroir" products and thus help to improve the income of rural populations. They present these approaches as an important component of the policy of the 2nd Pillar of the Green Morocco Project in favor of local products.

Our objective was to identify the mental models, references and paradigms, the balances of power and the implicit or explicit objectives that underlie the initiatives and projects of Geographical Indications [2]. To do this and understand how they have impacted the valorization of these products, we have analyzed the existing documentation and specially the programmatic official (CGDA, 2009, Amigha, 2007, ANOC, 2010,) documents and organized opened interviews with several private or public actors and reported collective meetings and participatory workshops organized by the local public services to improve the governance and implementation of their projects where we have attended. All the observations were reported in a synthetic document (Dubeuf, 2015)

The certification projects have been studied in two regions: In Northern Morocco (Tangiers – Chefchaouen Chefchaouen), where we considered the development project of the goat milk sector and the certification of the « Ajbane Chefchaouen » cheese; in the Argane tree area (South Western Morocco), with two initiatives, the PGI Argane oil, the first certified one in Morocco, and the certification project of the kid meat, presently being renegotiated in the Essaouira Province.



Map 1. Localization of the studied Geographical Indications

RESULTS

The stated objectives of the public authorities were to increase the value and quality of the products by promoting the implementation of new labels; but we observed also that the local marketing conditions and their relations to the production systems have been little considered:

The narrowness of the market of the Chefchaouen cheese made with goat milk has been confirmed by several testimonies. The low level of local consumption of dairy products, the competition with similar products made with cow milk at a much lower price, explain this situation. These reasons are all reservations to limit the potentialities of dairy goat products and about the relevance of a Denomination of Origin as proposed by the authorities, when since 20 years, the market has not met the expected growth respecting to the undertaken investments.

Regarding the Argane PGI, most of the volumes of oil are today commercialized in bulk in Europe to be used as raw material in cosmetic. In no way under these conditions, Argane oil is a resource; for these cosmetics companies, it is only an image and an argument to sell their products but they could substitute it by other "ethic", exotic components. The objective of the PGI and its possible role as a lever for local development (associated to tourism and craft) is neither defined nor discussed (Amigha, 2007) while suggestions could be deepened to promote a specific commercial development and position the oil produced and packaged locally by coop-eratives.

For kids, the hypothesis is that a future PGI could help to increase production, improve herd management and trade meat on emerging urban markets and is associated to a standardized slaughtering and new packaging. This would mean professionalization and specialization (Dubeuf et al.,

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[2] Protected Denomination of Origin (PDO) and Protected Geographical Indication (PGI)

2014). But the local family organization of the rural world, the coexistence between several agricultural, craft or other activities, local production systems or the collective management system of rangelands (Agdal) have been little studied until recently and not considered to prepare PGI specifications (ANOC , 2010). They have today to face several critics and a new recent labeling scheme is now discussed. It has associated more narrowly local Haha Berber populations and has enabled to re-write specifications integrating more the local practices, the traditional management system and on a smaller areas (the area of the Haha community only).

The 2nd pillar of the Green Morocco Project is a structured policy as defined by Muller (1990), dedicated to small holders and hinterlands and the GI's measures are one of its components. An agreement between UE and Morocco has been firmed in 2015 to mutually protect the GIs and the strategy developed by Morocco is influenced by the French and UE visions (M.A.P.M Maroc/M.A.A.P. France, 2010). Besides the initiatives are generally from administrative top – down origin and the local professional organizations are generally associated only once the project has begun, and their orientations decided without their contribution.

This could explain the observed difficulties for the actors to appropriate these certifications. Distrust or even hostility was often perceived from the small and medium farmers which could be the consequence of these starting conditions. Besides, the complex and often ambiguous articulation between the foreign GI concepts and the rooted ones of « roumi/beldi » and «Hourr/Mzaour » which has been still not much studied (Jabiot, 2013) could increase some misunderstandings about the several underlying logics. New dynamics associating more the local actors could open up favorable prospects as observed for the kids but more business planning for monitoring the objectives on the markets would be necessary.

DISCUSSION AND PROSPECTS

These results have confirmed and specified those of previous studies that have analyzed globally the Green Morocco Project such as Akesbi, (2011) who has underlined its productivist orientations, standardized approaches, an opaque and cumbersome governance, ambiguities and contradictions between the 1st and 2nd Pillar. Today the Geographical Indications in Morocco would be first the copy and paste of foreign more or less successful stories applied without enough reflexivity. The classical dominant model of progress, dominated by public authorities is still present with their (wrong) faith that any technical progress or commercial liberalization would lead to a social progress. The background to promote specialized models and systems is still considered as the only efficient ones. Most of the GI project drivers consider still that the local actors of the rural areas are generally ignorant because they are without education and could become competitive only by integrating technical external innovations; the local practices have been little articulated with the technical innovations in the GIs specifications. Consequently, the GIs are today in Morocco more a communication support of image than a tool for development and their impact on local economies is still very low. Mobilizing them to develop effectively the Moroccan hinterlands would probably require to include them in a necessary larger discussion on the governance of the public policies in favor of rural areas in Morocco. The impact of GI's policy is directly linked to all the policy of the 2nd pillar. The scattering of funding is for example a consequence of these characteristics accentuated by political client manners which limit the impact of these programs. Although these programs are globally well endowed financially, the absence of documented business like approaches could lead to failures. More detailed formulation of the objectives of the projects, their steering organization and the ways the actors could more efficiently participate could favor their successes.

The diversity of local products in Morocco, their local roots with different qualifications than those proposed now by the GI's policy could also help to build a specific approach more adapted for the new stakes of the changing Moroccan context and perhaps to other Southern countries.

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Stages of innovation for adopting differential quality in olive-oil geographical indications

Sanz-Cañada, J., Belletti, G., Rojo-Abuin, J.M.; Bartolini, C.[1]

***Abstract* – The paper aims to contribute to the design of methodological tools for typification and hierarchisation of enterprises that belong to olive-oil geographical indications (GIs), according to their respective trajectories in their process of adoption of innovations and knowledge in terms of quality. The GIs analysed are the Protected Designations of Origin (PDOs) of "Sierra de Segura", "Sierra Mágina" and "Estepa", in Andalusia, Spain, as well as the Protected Geographical Indication (PGI) "Olio Toscano", in Tuscany, Italy. The information was obtained by means of surveys to oil enterprises. Three synthetic indicators of quality, as well as a general quality indicator (IQ), were elaborated upon the basis of nine original variables : i) quality in processes and technological innovation; ii) best practices in quality; iii) organisational and commercial quality and innovation. We applied cluster and factor analysis and then we tested the next hypothesis. First, it is confirmed that firms belonging to a GI reach significantly higher IQ than that the non-affiliated ones. Second, it is also verified that private firms score significantly higher IQ than cooperatives. Finally, the size of the firm does not provide significant differences in the scores of IQ.**

***Keywords* – Geographical Indications; olive oil; synthetic indicators of quality; adoption of innovations, cluster analysis, factor analysis.**

INTRODUCTION

Within the scope of analysis of the dynamics of organisational proximity in Local Agro-food Systems (LAFS), a debate arises on the role to be played by collective action in the dissemination of innovations and knowledge for organisation of quality at local scale (Sanz-Cañada & Macías, 2005; Tregear et al, 2007). The object of our study involves the processes of territorial governance set in motion by the establishment of GIs. The paper aims to contribute to the design of methodological tools for typification and hierarchisation of of enterprises that belong to olive-oil GIs, according to their respective trajectories in their process of adoption of innovations and knowledge in terms of quality. Based upon a study conducted by our research team (Cendón et al., 2014), in this paper we incorporate the design of synthetic indicators of quality a segmentation thereof into three indices, corresponding to the three stages into which we divided the process of adoption by firms of innovations and knowledge in terms of quality: i) quality in processes and technological innovation; ii) best practices in quality; iii) organisational and commercial quality and innovation.

METHODS

The primary information was obtained by means of surveys in relation to quality and business organisation, relations with other enterprises and territorial development institutions in olive-oil GIs. We obtained 120 valid questionnaires which were answered by the managers or owners of oil firms in three Andalusian PDOs (Sierra de Segura, Sierra Mágina and Estepa) and in the PGI "Olio Toscano"[2]. The overall statistical population of the survey comprises all the companies of the Andalusian PDOs (mostly cooperatives), as well as a representative sample of 25 companies from the province of Florence, affiliated to the Italian PGI (mostly private industries). Oil mills were also included which, on being located within the territorial scope of the GIs ("Sierra de Segura" and "Sierra Mágina" PDOs), do not affiliate to the GI.

From a relatively high number of variables, we selected, according to statistical quality, to the differentiation potentialities and to the balance among the different concepts, the following ten ordinal qualitative variables, i.e., the components of the quality indicators a1) Quality in processes and technical innovation (IQ1): investments and improvements made in the last 15 years; physical-chemical quality controls; a2) Best practices in quality (IQ2): milling lapse time after harvesting; separation of olives according to qualities; malaxation temperature; a3) Organisational and commercial quality and innovation (IQ3): training in oil tasting and organoleptic quality; training of technical staff and mill masters; promotion activities; awards for oil quality.

We calculated the aggregative synthetic quality indicators IQ1, IQ2 and IQ3, using the respective normalised variables, as well as the general quality indicator, IQ (sum of all three). We performed an analysis cluster using the k-means procedure over Euclidian distance, based upon the values obtained by the companies in the synthetic indicators IQ1, IQ2 and IQ3. We then applied the contrasts of hypotheses to the equality of means in quality indicators, employing Bonferroni's correction, and segmenting the statistical universe by means of a series of variables. We finally used the principal compo-nents analysis technique, with Varimax rotation and Kaiser Normalisation, based upon the synthetic indicators IQ1, IQ2 and IQ3.

RESULTS

The cluster analysis hierarchises the enterprises into four groups of firms, each one composed by 20/36

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2 Of these, 72 were cooperatives and 48 were private enterprises. We used the results referring to the PGI "Olio Toscano" as an element of reference with regard to differential quality for Andalusian PDOs.

companies (Table 1): cluster 1 reaches high average values in all the synthetic indicators, whereas cluster 4 has low values in all of them; cluster 2 and 3 show opposing values between certain pairs of indicators.

Table 1. Cluster Analysis. Average values by cluster of the synthetic quality indicators

	Cl. 1	Cl. 2	Cl.3	Cl. 4
IQ1:Quality in processes and technical innovation	0.70	0.85	-0.81	-0.42
IQ2: Best practices in qual.	1.02	-0.57	0.47	-1.02
IQ3:Organisational/ Commercial quality and innov.	0.95	0.50	-0.05	-1.11

The principal components analysis (Table 2) pro-vides two factorial variables. The first factor (58% of variance) differentiates the companies that obtain high scores in IQ2 and IQ3, in relation to those that exhibit low values for these indicators. The second factor (26.4%) serves to differentiate the firms presenting high values for IQ1 from those with low scores for it. Of the three synthetic indicators obtained, IQ2 and IQ3 show a significantly positive degree of association (Spearman's coefficient). Figure 1 shows the factorial plan which includes the values obtained by the firms with regard to first and second factor: four symbols represent the different clusters to which the firms belong.

The contrasts of hypotheses provide significant results for the difference of means in the general quality indicator IQ in relation to the following variables (p<0.1): belonging (52.6% higher) or not to a GI; private industry (12.6% higher)/cooperative. Segmentation of the population with the variable "size of the firm" shows no significant differences.

Table 2. Principal Component Analysis. Correlation coefficients between synthetic indicators and factors

	Factor 1	Factor 2
IQ1:Quality in processes and technical innovation	0.154	**0.970**
IQ2: Best practices in qual.	**0.913**	*
IQ3: Organisational/ Commercial quality and innov.	**0.769**	0.372

* <0.3

Extraction method: maximum likelihood. Converged in 3 iterations.

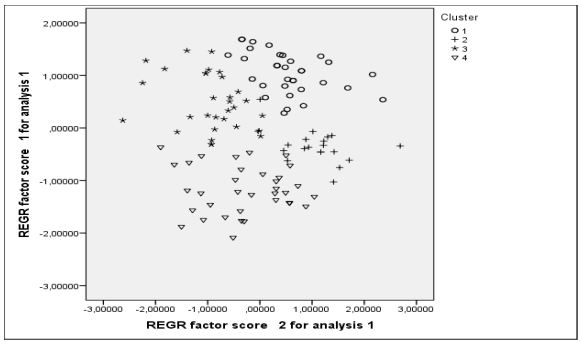

Figure 1. Factorial plan: values obtained by companies in factors 1 and 2.

DISCUSSION AND CONCLUSION

In certain olive-oil GIs with a certain degree of organisational tradition, the Regulatory Boards take on a leading role in the collective action of LAFS, as points of dissemination of innovations and knowledge for quality enhancement and organisation. The hypothesis is confirmed that the oil firms affiliated to the GIs reach quality indicators that are significantly higher that the non-affiliated ones. It is also verified that the private enterprises, many of these oriented towards strategies of differential quality, also score significantly higher values for these indicators than the cooperatives. However, a segment of the cooperatives is now entering the advanced phases of the process of adoption of innovations in best practices and in organisational and commercial quality[3]. The size of the firm does not significantly discriminate the values of companies' quality indicators.

Finally, the quality adoption stages of oil companies affiliated to GIs are relatively successional, due to the fact that reaching a certain quality threshold in one phase is a necessary condition in order to initiate improvement processes in another phase. Quality innovation in processes is considered to consti-tute the first link in the quality chain and, in our study, this reaches an acceptable threshold for most of the enterprises. Nonetheless, the subsequent phases can overlap and be partially associated, which occurs in the case of the second (best practices) and third (organisational/commercial quality) phases.

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[3] This is the case of many of the cooperatives of Estepa and of the advanced segment of the cooperatives of S. Segura and S. Mágina.

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Collective action milieus for registering coffee GIs from Colombia and Thailand

Xiomara F. Quiñones Ruiz, Thilo Nigmann, Marianne Penker[1]

***Abstract* – The registration of GIs in the EU requires collective efforts of organised producers as they shall define quality standards and defend their food products' reputation while highlighting their geographical origin and value to consumers. The aim of this study is to scrutinise the collective action of organised coffee producers in Colombia and in Thailand along the GI-registration process. More specifically, we aim to understand to what extent Ostrom's design principles explain effective collective action in the GI-process. We collected data using semi-structured interviews and document analysis, which we then processed in a qualitative text analysis. Results show that the design principles might be helpful for understanding the local collective action of Colombian coffee growers, how¬ever, the principles also show challenges concerning social boundaries (e.g., interactions between coffee growers and roasters) or collective choice arrangements when coffee growers deal with international roasters or brand owners. In the case of Thai coffee growers, collectiveaction is much weaker than in Colombia. Thai coffee growers are not organised and still struggle with basic civilrights such as obtaining Thai citizenship as many of thembelong to marginalised ethnic minorities.Thus, the design principles are difficult to follow in the two Thai cases. GIs are still new in developing countries and in some cases it is difficult to consider GIs as a long-term practise of linking traditions, territory, quality and human factors since GIs might be mainly considered as a commercial strategy to reach international markets.**

***Keywords* – PGI, EU, collective action, coffee, Colombia, Thailand**

INTRODUCTION

It is well-known that growers in the global South produce commodities such as coffee or cocoa while countries located in the North add value to supply consumers with (specialty) coffees or renowned choco¬lates. Coffee producing countries have started to register Geographical Indications (GIs) for coffee in the EU since 2007. The registration of GIs in the EU requires collective action of organised producers as they shall define quality standards and defend their food products' reputation while highlighting their geographical origin and value to consumers.

Precisely due to the tradition and long-term collec¬tive efforts made by federated Colombian coffee growersto position their coffee at international markets, the Federación Nacional de Cafeteros has been able to register and implement GIs. For Colombian coffee growers, GIs were considered as an alternative to further protect Café de Colombia abroad, following the experience achieved by previous registrations of trademarks and collective marks (Quiñones Ruiz et al., 2015).

On the other hand, Thailand introduced arabica coffee as a strategy to eradicate opium production with the support of the Thai/UN Crop Replacement and Community Development Project between 1972 and 1979 (Renard, 2001).In 2003 Thailand ratified a national GI-law. Thai governmental agencies actively promoted GI-registration. They approached the Doi Tung Development Project (DTDP), a royal Thai foundationinitiative aiming to improve rural indigenous livelihoods, as well as Doi Chaang Coffee Original Co. Ltd (DCCO), a Thai-Canadian coffee pro¬ducing and roasting company, to seek protection for Kafae Doi Tung and Kafae Doi Chaang respectively. For DTDP and DCCOGI-owners, GIs are seen as a mean to improve quality and receive protection as a member of the ASEAN Economic Community (AEC)in the EU. Café de Colombia was registered in 2007 in the EU, while both Kafae Doi Tung and Kafae Doi Chaang received recognition in 2015.In this paper, we aim to evaluate collective action processes along GI-registration.

METHODS AND ANALYTICAL FRAMEWORK

In order to understand the collective action of Protected Geographical Indications (PGIs) for coffee in Colombia and Thailand, we make use of Ostrom's design principlesto realise to what extentthey explain collective action in the respective GI processes.

The design principles are understood as condi-tions that foster functioning collective action and institutions for common-pool resources. These principles can also be observed in the building of GIs (Quinones-Ruiz et al., 2015). The principles are:
1) well-defined social and geographical boundaries, 2) proportional equivalence between benefits and costs, 3) collective-choice arrangements, 4) monitoring, 5) graduated sanctions, 6) conflict-resolution mechanisms, 7) minimal recognition of rights, and 8) nested organisations (Ostrom, 1990).

We collected data using semi-structured inter-views, focus groups and document analysis (field work from June to September 2013 in Colombia andfrom August to October 2014 in Thailand). We then processeddata in a qualitative text analysis (Mayring,2000). Reflective loops (e.g., discussion of results with GI-experts) further improved the validity of results.

RESULTS

We observe that Ostrom's design principles are more likely to be transferred to the study of Café de Colombia at the producer level only, since the applicability of the principles show challenges concerning social boundaries (e.g., interactions between coffee growers and international roasters and brand owners) (principle 1) or collective choice

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arrangements (who makes and modifies the rules) when involving international roasters (principle 3). For this paper, we mainly focus on principles 1, 2 and 3.

As for Thailand, there is no clear understanding of what GIs mean for coffee growers and local roasterslocated in the geographical GI-boundary. Additionally, the lacking legal status of many coffee growers in the northern highlands leads to segregation and marginalisation.Most coffee growers belong to ethnic minorities anddo not hold Thai citizenship or land right titles,are frequently illiterate inThai implying neglected participation in political affairs, access to social services and freedom of movement (Berkeley, 2009). Due to the technical and organisational capacity of DTDP and DCCO, theyremain the only legitimate GI-users of Kafae Doi Tung and Kafae Doi Chaang. While both GIs incorporate large stepsof the value chain -purchaseof coffee cherries from growers, processing, sales of green and roasted beans to distributors, final consumers or via their upmarket coffee houses throughout the country - benefits are not equally shared among stakeholders. In the former case, GI-benefits are indirectly redistributed to locals due to the NGO status of the DTDP and itsalternative development approach. Further,the registration of coffee growers with DTDP as suppliers or employeesincreased the pressure on the govern-ment and accelerated their naturalisation as Thai citizens. DTDP plans to become independent and to transfer the complete GI-ownership to the locals. Yet it is unclear how the Thai government will tackle the absence of official land titles and legal status. As for Kafae Doi Chaang, GI-standards foresee that pro¬cessingexclusively takes place in their facilitiespreventing numerous coffee growers and roasters within the demarcated area from GI-use. Hence, all GI-benefits are concentrated in one single private enterprise.

Discussion and conclusion

While coffee growers are well-organised in Colombia and benefit from long-standing collective action, coffee growers, located in the districts Mae Fah Luang, Mae Sai and Mae Suai, the Chiang Rai province of northern Thailand, are not yet organised,which is mainly attributable to the lack of civil rights of regional ethnic minorities. Additionally, the Thai GI-law and the "top down" approach by Thai governmental agencies favour narrow groups and by thisexcludemany actors from benefiting from the GI.Thus, in the Thai cases, it is very difficult to observe the design principles at the local level (i.e., principles 1,2,3) and Café de Colombia also face the same situation when dealing with international roasters or brand owners to become authorised users.

A purefocus on the growers' collective action for establishing and managing origin protection does not give a full picture when dealing with a commodity such as coffee due to the governance of the value chain (growers selling green beans as commodity and international roasters selling roasted coffee and obtaining most of the value added). GIs are still new in developing countries and in contrast to the European GI (terroir) ideal it is difficult in some cases to acknowledge GIs as a long-term practise of linking traditions, territory, quality and human factors since GIs might be mainly considered as a commercial stra¬tegy to reach the common EU market of 28 nations. Therefore, challenge and attention should be given on how to build GIs in developing countries as a branding from below strategy to avoid the exclusion of the poorest.

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WG8 - Food systems and spatial planning. Towards a reconnection?

In physical planning the "transition" prospect toward a 'low carbon' society calls for a new 'relocalisation' of energy and matter flows, especially between urban and rural domain. In such a framework, the presence of a viable, rentable and 'nature based' proximity agriculture, strongly connected with the city, even in periurban areas, is emerging as a key issue in planning practices and design, even in coping with resilience as well as fairness matters. In this framework, research on food systems and short supply chains has become increasingly considerable in the urban and spatial planning literature. Further, it is worth highlighting that interest in local food is raising awareness among urban dwellers. It is becoming clear that planners and urban designers should begin to take into account questions about food self-reliance, farmland preservation and food distribution in conceiving morphological and functional patterns at the (bio) regional scale.
The aim of this working group is to analyze how food systems can be integrated in urban and spatial planning in a more efficient way. To this end, we propose some questions we would like to address:

- *Why 'local food' is hidden behind the city's boundaries? How could we improve local food systems and their efficiency? Can smart cities integrate the 'food vector' in urban and spatial planning? Can the city design a smart food system which integrates 'local food logistics networks', embracing consumers, producers, retailers and collection and distribution centres? Can the 'local food system' be as efficient as other logistic systems?*
- *How can we recover and design a connected agriecological structure at the regional and urban scale?; which innovative urban design methods can be developped accordingly to this goal in fostering short food supply chains (market places, logistics, housing, urban/rural interface design…)?*
- *Which agricultural good practices and territory design can be implemented as integrated tools for resilience, risk prevention, resources protection and food safety (groundwater protection, soil safety, water systems sustainable regeneration)?*
- *Which organizative and partnership tools for urban-rural joint policies and projects (e.g agricultural parks, river agreements, agri-landscape design…) could we apply, with the aim at preserving prime farmland and empowering farmers in partecipative planning processes and choices*

These themes, among others, are increasingly worldwide tackled in many urban and regional experiences, showing the feasibility and importance of agriculture, and food delivering in fostering a new self-relying settlement and development process (e.g. Canada and the USA 'food policies' and 'food hubs', in Europe, 'Agricultural Parks' and 'agri-urban contracts').
From this perspective, we invite participants to propose jointly theoretical approaches and experiences to a new sustainable model of city-region, which includes the food vector in land/urban planning, understood as a fundamental part of the urban metabolism. In this regard, the debate will focus on new planning and design tools to enhance a local "foodshed" and on the efficiency of the flows of the 'local food logistics' from the farmland to the collection centres, and from them to the consumers.

Convenors:
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S. Callau, Agroterritori Foundation, Spain

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Sustainable Productive Landscape in the Amsterdam Metropolitan Area. Towards analysis on different scales

Daniele Burrascano, Johannes S.C.Wiskerke, Luca Montuori [1]

***Abstract* – Over the next few years the global population will continue to rise. The number of people living in urban areas surpassed the number living in rural areas. Thus, the world has become more urban than rural. This change implies cities will need to further develop urban food production systems. Furthermore, we need to increase sustainability of urban development. Urban agriculture is becoming an integral part of urban planning and design to develop and sustain our cities. The Amsterdam Metropolitan Area is one of Europe's most stable and successful regions. By 2040 the population of Amsterdam is expected to grow by half a million. The city will need an improved infrastructure to accommodate hundreds of thousands of new homes. This includes facilities needed for their sustenance. Efficient planning and food distribution strategies will be crucial to develop the Amsterdam Metropolitan Area. The goal of this research is to analyze and compare several typologies of urban agriculture. This considers different scales (within the city, a metropolitan park and urban district development).**

***Keywords* – Sustainable Productive Landscape, Urban Food Planning, Amsterdam Metropolitan Area.**

INTRODUCTION

In 2009, the number of people living in urban areas (3.42 billion) had surpassed the number living in rural areas (3.41 billion). Since then, the world has become more urban than rural (United Nations, 2010).

The distinction between rural and urban area within the metropolis is vanishing. The urban-rural fringe is where the landscape acquires value through urbanization. These urban expansions have formed complex hybrid landscapes. They consist of residential areas, commercial zones, agricultural land, recreational functions and natural areas.

Rural areas can play a strategic role for the sustainability of urban development.This will affect the quality of life in the cities.

The incentive for the Amsterdam Metropolitan Area (MRA), over the next few years, is to come up with a plan for sustainable metropolitan development;based on incorporation of local food resources. Therefore good food-strategies are becoming essential for re-locating the production and consumption system in metropolitan areas.

This is an incentive to reduce the impact of food imports as well as to involve more sustainable and local food sources.

The concept of Continuous Productive Urban Landscape (CPUL)in European context was developed in the recent years as a new spatial perspective on metropolitan food systems.(Viljoen, CPULs Continuous Productive Urban Landscapes: designing urban agriculture for sustainable cities., 2005)

It advocates such productive landscape as essential elements of sustainable urban infrastructure (Viljoen, The CPUL City Toolkit: planning productive urban landscape, 2012).

For architects and planners, the question of how to design and build must now be weighed against conditions in which finite global resources will play an even greater role.

Integrating the food system into urban planning implies that some urban areas must be devoted to food production. It would be also important to develop a local food system linked to urban planning in multiple levels, to protect and foster environmental development.

The aim is to explorethe possibility to incorporateurban agriculture into landscape strategies and city planning.

In order to achieve this task, we analyzed and compared several typologies of urban agriculture at different scales. The goal was to answer the following questions in relation to the ambitions of MRA.

What are the developmental models that are emerging in MRA?

How can thefutureMRA guarantee healthy and local food?

What are the innovative challenges for conventional food system planning in the MRA?

METHODS

The methodology used in this research has been to gather information through several interviews as well as the analysis of a considerable amount of planning literature and scientific planning journals.

The research involved several semi-structured inter-views of 60 minuteswith different representatives of the MRA and of Province of North Holland.

During these interviews, important concepts related to the food system and planning process were discussed. In addition three projects served as case studiesdiscover the extent to which we could define them Sustainable Productive Landscape.

The analysis of Urban Food system in MRA becomes important as a starting point to understand how to develop a resilient urban food system based on suitable spatial planning concepts.

The results denotes that city and agriculture are closely intertwined.

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According to the statistic, on land-use in the MRA, one of the most relevant components are the agricultural fields. At the moment, they take up twice the space of the built area (Provincie Noord-Holland , 2014).

On the other hand, in terms of populations, are absolute numbers.

Amsterdam is growing most rapidly, followed by Almere. It is expected that the population of Amsterdam until 2035 with 101,300 increases and that of Almere with 83,000. Almere has relatively the strongest rise: 42% (in 2035).

Thus, the big challenge will be to develop a sustainable productive metropolitan landscape system, which operates between urban and rural factors but also public and private parties.

One approach is to work in a multilevel of governance with both parties and promote shorter supply chains. This will promote sustainable urban development and offer further opportunities for the regional economy.

RESULTS

In this regard, the strategy of MRA has two main goals: integration of diversity (new urban-rural relation, landscape and functional) and sustainability (healthy food and diets, climate, and air quality).

One of the most important aspects analyzed in the MRA is the different scales of food production system. Amsterdam and the whole Metropolitan region are all dependents on food imports and exports, although in last period it has been drastically minimised.

Recently, there has been a greater awareness about the proximity of food production and processing, by supporting development of biological and multifunctional agriculture.

People want to know where the food comes from, how much space, energy, and water are required for the production and processing.

The Sustainable Productive Landscape enable the analysis of the city as a complex system.

The word 'system' is used as a general term to indicate several configurations of interconnection between cities, and various defined elements within the city, and theorize on their development and demographic implications (Berry, 1964).

Through this research, we analysed three different projects in the MRA.

These case studies can serve as examples ofhow we will produce food in 2040 while also accounting for population growth, transportation, homes and commerce in the MRA.

The first case studyis about urban agriculture projects in the city of Amsterdam Nord.

We explored the use of public space, considered marginal space.

Nevertheless, this space becomes socially productive in terms of education, research about healthy food.

In this context, projects like NoordOogst, depends on citizen's involvement for maintenance and improvement.

The second case study (project "park21") a metropolitan park situated between Hoofddorp and Nieuw-Vennep,shows the integration and involvement of farms in the spatial planning and development strategies. This park indeed will be an important ecological and environmental infrastructures such as biodiversity, water management, and climate mitigation in the MRA.

Finally, the Productive Landscape is defined as "an urban interpretation of the cultural landscape, of open space, is generated not only through its designers, but equally through it users" (Viljoen, The CPUL City Toolkit: planning productive urban landscape, 2012).This reflects the project of OOsterwold in Almere.

This a new sustainable approach for the future of city of Almere, where urban agriculture is incorporated in the city's development plan.

This is particular relevant for planners, designers, and local authorities to enforce new ways of plan-ning our cities in relation with food.

CONCLUSION

It is important to have a long term vision about the role of food and agriculture in metropolitan areas and to develop a strategy that is supportive of such a vision. Urban agriculture should therefore be recognized as an opportunity and be integrated into urban and regional planning at different levels of scale.

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Towards fundamental new urban planning for productive cities: the quest for space

Rob Roggema[1]

***Abstract* – Research has recently shown that the average productivity of food within the city limits is low. This places Urban Agriculture for a serious dilemma: does Urban Agriculture include a serious component of food production, or is urban Agriculture a cover-up for social processes of an urban population? Without neglecting the benefits of Urban Agriculture for social cohesion, the environment and education, the production of substantial amounts of food must also be an issue. However, in the city the required space is a serious problem. Current urban planning practice often focuses on the compact city and high-density neighbourhoods or the creation of integrated large-scale urban centres. In this practice there is often limited space available for public green, let alone the growth of food. Hence new planning and design concepts are required to accommodate the demand for more urban food production. The city should, in some respect, be redesigned. In this paper the spatial capacity of the city will be linked with a spatial typology derived from a combination of literature and design projects. Where large spaces are available, bigger Urban Agriculture types are possible. Depending on the urban environment a typical urban agriculture system can be designed.**

***Keywords* – urban agriculture, spatial capacity, spatial typology, urban food system**

INTRODUCTION

An analysis of the total food consumption in the Netherlands and the estimated production of food within urban boundaries demonstrate that only 0,0018% of the consumption is currently produced in the city (Roggema, 2015). In order to increase this percentage the city needs to offer more space (Roggema, 2014). The question is where to find space in urban environments, which often suffers from land use competition and an urge for higher densities. There are three basic options: lowering the density, transformation of existing uses, under and above buildings (Roggema, 2015).Often these options are not used, partly because a spatial analysis of the linkages between available space and urban agriculture types lacks. This article investigates therefore the potential link between capacity and typologyin the city, and the potential increase of urban production.

PROBLEM STATEMENT

For long, urban design has not been equipped to include Urban Agriculture. The majority of current food-projects in the city is small, is located on temporary, unused space, and developed against the odds by persisting residents. There is hardly any analysis available at city level. This implies suitable urban spaces are underused, and misfits occur, for instance when a project has larger demands than seem to be available. But if we take a look at the entire city the capacity is larger than expected. Analysis shows for instance that in Amsterdam 12% of the area could easily be transformed in productive spaces, providing food for 25% of the Amsterdam population (Mulder and Oude Aarninkhof, 2014). In this calculation valuable space, rooftops and private land is excluded. A big win could be achieved when the right fit between available space (capacity) and the type of urban agriculture (typology) is made.

METHODOLOGY

The method used in this research consisted of five steps. First, desktop research and analyses of urban agriculture designs led to a collection of good and diverse examples. Secondly, definitions of spatial capacity and typology have been developed. In the third step explorations on spatial dimensions of the capacity and typology was undertaken in order to estimate average sizes of urban spaces and urban agriculture types. In the next step the different elements of typology and capacity are combined in a matrix. When subsequently capacities and typologies are maximally connected at city level an estimation of the productivity is made and compared with current productivity of food production in the city.

The following definitions were developed:

1. The Spatial Capacity is defined as the amount of public and private spaces, which can be made available as productive areas.
2. Spatial Typology Urban Agriculture is defined as the different spatial manifestations of Urban Agricultural types in the urban and peri-urban areas with their specific spatial standards.
3. The capacity-typology matrix is defined as a table which offers insights in the possible couplings of urban spaces and UA-types.

EXPLORATIONS ON SPATIAL CAPACITY AND TYPOLOGY

The capacity of the city is measured in terms of available spaces for growing food. First a range of spaces, public (parks, nature, rest spaces, infrastructure, parking) and private (roofs, balconies, gardens, parking, facades, inside buildings) have been identified, their sizes are estimated and which combinations of use are possible. When in a city all these places are located a map could make the capacity for growing food in the city visible.

The first distinction in typologies for urban agriculture is made on the location (urban fringe, neighbourhood, urban centre, building), whether it uses a natural or artificial substrate and a rough estimate of the size (big or small). A range of types, with according sizes, requirements, types of use and examples (see list of examples, pg. 3) have been found. These types are subdivided in productive spaces (urban farm, aquaponic system, roof garden, coilective garden, edible forest garden, edible forest, wild foraging, fringe farm, vertical farm, private

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vegetable garden, allotment garden, productive garden/restaurant, productive garden/shop, productive garden/hotel and productive garden/office), distribution (individual, company and trucks), processing (factory, at home) and sale (street vendors, restaurant, shop, market). Each of these categories requires space, but in a different manner.

The types of Urban Agriculture and the spatial capacities are the brought together in a matrix, in which the required sizes of urban agriculture types are matched with the available spaces. This matrix gives insights on where the different types of Urban Agriculture could fit best. In practice, and for each city specifically, the exact locations must be identified, and further designed.

CALCULATIONS ON CAPACITIES

Assuming that each of the Urban Agriculture types finds its fit in every municipality in the Netherlands it is possible to calculate the total amount of food, which can be produced within urban boundaries. Therefore the size in m2 of each of the UA typologiesis multiplied by a reasonable number of every type to be realised in each municipality. The total area is then multiplied by 661 kg, the productivity in urban areas per hectare and times 403 municipalities to find the total amount of products in kg's for the Netherlands. This way 25.5 million kg's can be produced in urban environments, which is still only 0,57% of the total consumption. This worrying low number of food that can be produced in the city leads to the statement that an increase must be sought in three ways: 1. The productivity per hectare must be increased, 2. There is additional space available (up to 12%) which should be made productive, and 3. There is extra space to be found in unexpected locations, such as in double layers on the roof, multiple floors under the building or transformation of existing land uses. The latter statement, in combination with the presented typologies, and the use of extra available spaces, lead to complete new urban forms and redesigned city concepts.

DISCUSSION AND RECOMMENDATIONS

The calculations and sizes of specific uses and spaces are based on assumptions and averages. To get a clear picture of the exact amounts each municipality should be investigated on its own, or in a regional context. The total amount of 0.57% is 30 times more than the current amount, but still less than 1% of the total amount of food consumed. The strict rule to calculate only the area within the urban boundary should be replaced by a boundary that encloses a part of the countryside around the city. Recommended to investigate which size of the countryside is required to feed the urban population, but also at which scale the cycles of water, energy and materials can be optimally closed. As an estimation, the radius of the current city times two could be a justifiable outer boundary, which provides a region for food production which is 3 times the area of the existing city. This space is in use for al kinds of functions, but could be transformed into food production for the city. Assumed that 12% of the current urban area could be used as productive land (Mulder and Oude Aarninkhof, 2014), 8 (full area) x 3 times x 90% (excluding infrastructure, sparse building) this space is the maximum available area for food production near the city. This space could approximately produce 12.3% of the total consumption. In future research this number should be further investigated.

It is recommended to further investigate new urban design concepts, which can raise the amount of space available for food production. In a research by design process new city concepts need to be based on the typologies presented in this paper, the 12% available space in the city and the search for additional space in unprecedented places.

CONCLUSION

The calculations on capacity and typology of urban agriculture in this paper show there is much more space easily available to produce food in the city than is currently used. Still, even if all the capacity identified in is paper would be used the total area is very limited. If all available spaces, public and private, are taken into accountthis only produces 0,57% of the food that is required to feed the country. To produce enough locsal food the definition of local urbanised food supply must be widened with, at least the direct surroundings of the urban con-glomerate. Additionally, the urban designs of cities must be reconsidered. Instead of increasing densities, a productive city needs to create extra spaces to grow food through the transformation of existing land use, fully profit from the available green spaces and find space for food production in places that didn't qualify as productive spaces before.

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Characterizing peri-urban farming spaces. A methodology for urban planning.

Esther Sanz Sanz[1]

***Abstract* – Credited benefits of agriculture multifunctionality legitimates protection of peri-urban agricultural land use in planning. But operational frameworks considering all the stakes specific to periurban agriculture and practices for supporting spatial management decisions and planning are lacking. This paper presents our methodology to characterize periurban productive agriculture in order to support urban planning. Involving cropping systems and structures as well as urban morphology, it could be used as a tool for policy makers and stakeholders.**
***Keywords* – agri-urbanism; food planning; periurban farming; periurban.**

INTRODUCTION

City's sprawl is encroaching onto farmland; the urban fringe intensive agriculture that used to be an important land use is strongly diminishing (EEA, 2006). Our thesis is that farming under urban influence is responding to the pressure and opportunities attached to its geographical adjacency to cities.

Three trends can be identified on literature review and personal fieldwork: either an intensive and specialized high-value production selling either in short or long supply chains (Aubry and Kebir, 2013); or pluriactivity, low-intensive lifestyle and leisure oriented farms, like equine services (Busck et al, 2008); or extensive PAC-primes oriented production linked to anticipation effects (Jouve and Napoléone, 2003). So, rural agriculture even under urban influence is different from peri-urban agriculture which iscan be either focused on urban demands or taking advantage of urban facilities, and it's in spatial and functional interaction with urbanized zones.

Scholars have broadly analyzed peri-urban agriculture in monographic studies, either regional case studies (par example, the French revue Cahiers Agricultures vol. 22, n°6 of 2013) or practices oriented studies (par example, the latest edition of the revue "Espaces et Sociétés" deals with "Agriculture and City"). However, integrating frameworks considering all the stakes specific to peri-urban agriculture and practices for supporting spatial managementdecisions and planning are lacking (Zasada et al,2013).

The goal of this paper is to draw up a methodology to characterize and locate peri-urban productive agriculture, in order to construct agri-urban landscape units involving cropping systems and structures as well as urban morphology, to integrate agriculture issues in urban planning.

METHOD(S) / APPROACH

We need to build an operational and generalizable spatial definition of existing forms of agriculture on urban fringe by the means of measurable and qualitative landscape indicators in order to support local planning. How peri-urban agriculture can be characterized and assessed overtaking definitions based on distance/accessibility to city-centers? We propose a methodology founded on a triple approach of agricultural issue: i) farming spaces characterization (landscape structures), by the means of landscape patterns analysis from aerial pictures and on-site landscape lecture; ii) socio-economic analysis of farming activities (landscape functions), based on statistical analysis and on-site interviews; and iii) land use and land cover policy settings (landscape policies).

For this purpose, we stand an agronomic and geographical approach (Deffontaines et al, 1995) combining a morphological analysis (landscape spatial patterns) to an analysis of geographical fields (space attributes affecting land-use localisation on periurban).

STUDY CASES

We are testing our methodological proposal on 2 case studies: Madrid metropolitan area (Spain) and Avignon urban area (France). Both regions have different urban growth models (compact versus scattered) as well as different policy settings. In one hand, Madrid is a metropolis with a compact and dense development. The study area counts more than 4mill people over 842 km² with an average density of 4930 hab/km². On the other hand, Avignon study case is a low-density dispersed urban area. Actually, the urban area of Avignon is the less dense urban area of more than 200.000 inhabitants in France (323 hab/km², for an average of 820 hab/km² for the rest of French urban centres), with little differences between the urban center and its surroundings (1 to 3,5, according to INSEE, 2013). For our purpose, we have delimited a sample of 385Km² on the Vauclusien side of Avignon urban area, with a density of 518 hab/km².

We'll focus on municipality scale because policy settings and decisions concerning land use are taking at municipal level in both countries.

RESULTS

Combining quantitative and qualitative variables, we have defined spatial units of peri-urban agriculture (APUs), which are intermediary tools to help planners to read agriculture. These variables come from different disciplines: geography (accessibility, height…), agronomy (irrigation, farm size, plots arrangement, culture system…), sociology and demography (population structure, outputs…), economy (land tenure, CAP subventions…) and political organization (environmental protection zones, land use plans…).

The APUs are statistically defined objects, as long as the methodology is systemic and generic, and so looking forward to be applied elsewhere. The APUs define spatially homogenous areas bigger than farms and with similar characteristics in terms of landscape patterns and farming uses (fig 1). Each APU has also

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the same level of "incertitude", that's the risk of farming land to be abandon due to urban pressure and perceived development possibilities. In this way, APUs cartography can guide public action to focus in the areas with higher urban pressure. The characterization of peri-urban agriculture allows moreover adapting public action depending on the incertitude. Finally, the methodology proposed can be easily used and transposed to any city, as long as it is systemic and generic.

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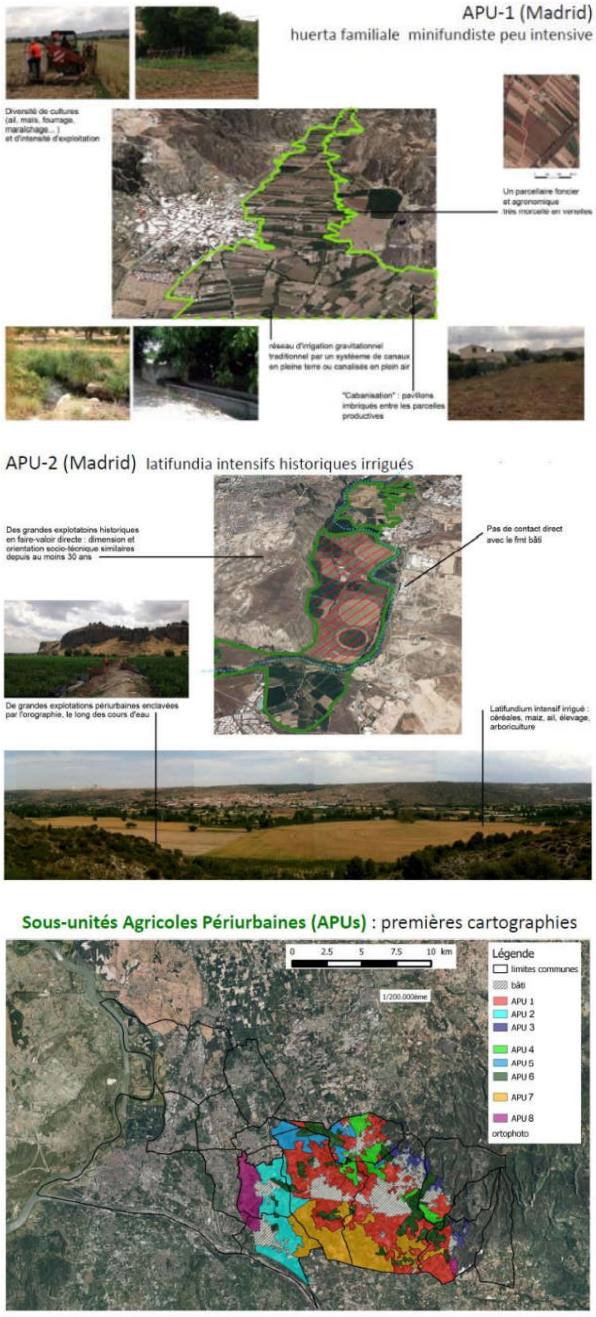

Figure 1. Two examples of APU units at Madrid study area and the APU delimitation cartography at Avignon study area.

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Szentendre Eco Island in the Agglomeration of Budapest

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***Abstract* – The Szentendre Island is a Special Area of Conservation in the Budapest metropolitan area. It measures 56 km², and the number of permanent residents for the four settlements is 10 thousand (the average population density of 200 per km² for the island and 684 per km2 for the total metro area). Almost 50% of the total land is agricultural area. The island is one of the most important drinking water sources for the intensively urbanizing area, providing Budapest with up to 70% of its drinking water demand. Our research and planning project (of 2013-14) was aimed to define what steps and measures are necessary to convert the island into an Eco Island. The island has a central location within the metropolitan area, but due to nature conservation and environmental restrictions, its infrastructure and road access are limited. Strict environmental measures are considered a burden by the majority. Future development (employment, supplies, tourism) are needed, but should reflect the demands of the local residents and at the same time, give a desirable, economically viable design to the existing special, environmentally clean condition of the island. The ECOISLAND PROGRAM is to fulfil these seemingly antagonistic wishes. This article describes the methods of investigation and the results obtained during identifying the specific, sustainable agriculture elements of the Program.**

***Keywords* – capital, metropolitan area, agglomeration, eco-island, water conservation, compensation payments, extensive land use, CSA, local self-sufficiency, eco market**

INTRODUCTION, FLASHBACK, INITIAL CONDITIONS

The protective measures of the water source, the lack of harmful effects of industrial activities, and the immense surface of natural plant cover all account for the healthy and unique habitat of the island.

The environmental conditions of the island ensure high ecological level for every agricultural produce grown here. Inconsiderate manure storage, the dominance of monocultures and the use of pesticides however, do raise issues of concern.

The most widespread method of production on the island is conventional arable farming that uses pesticides and fertilizers, which present a potential hazard in this unique water source area. Proposals have been made toward stakeholders of agriculture as to the environmentally safe methods of agriculture during the past years, but the observance of these proposed activities are hardly, if at all are monitored. According to our understanding, penalties for non-compliance may not be the best solution.

The climate, the high number of sunny hours in the island, and the increasing energy demand of future developments imply the use of alternative energy sources, such as solar cells and collectors. The island has a significant tree stand of its own, but the dominance of softwood species makes the use of biomass for energy production unprofitable.

The traffic and its environmental effect need to be decreased on the island. Access to the island is unsettled, for local residents and for services (incl. emergency vehicles) as well.

At present, the Budapest Waterworks, which operates the wells of the island, provides a significant amount to compensate the restrictions stemming from water protection measures. Using the amount in a more target oriented way may serve environmental purposes better.

The notion of eco-island is not a new issue. It has been formed and maintained over the decades by the protective measurements and regulations of the water source and by the strict protocol of authorities.

The task is to preserve the outstanding environ-mental condition of the island. Having this quality should not be a restriction or burden in the life of the inhabitants, but it should be a positive condition, a potential for further development.

To preserve or enhance the present environmental conditions, the following are needed: an ecological agricultural approach, alternative energy use, environmentally friendly transportation methods, promotion of self-sufficiency and self sustainability, and encouragement of the development of communities and community identity.

The Szentendre Eco Island strategy and operative program is to harmonize the alternative development projects of the island.

RESEARCH, METHODS

Our research is based on personal interviews with the stakeholders of the island. We aimed to reveal the problems, and clarify their intentions for future development. Stakeholders included senior officials of the local administration, successful and reliable entrepreneurs and farmers, representatives of ngo's.

During the course of strategic planning, we used and combined the development intentions obtained during the interviews to determine the objectives of common, integrated and harmonized development projects; and to manage the present conflicts of the island.

Research results for agriculture

The agriculture of the island is rather homogenous. The most important crops are corn, sunflower, potato, alfalfa and cereals. Crops of minor importance are strawberry and flowers; and the island is also known for its horticulture, viticulture and orchards. Except for a handful of large-scale livestock farms, animals of the island (cattle, horses, goats, poultry and swine) are mainly produced for self supply. Manure storage is a significant problem considering water protection.

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Manure heaps left on arable lands present a serious hazard to the water source.

There are two organic farms. One of them operates in a CSA system with a constant circle of customers (approx. 200 families), most of them living in Budapest. The second farm has its own shop at the Budapest organic farmers' market. There are a number of initiatives and activities on the island to promote organic farming, backyard livestock production and the management of local produce. Unfortunately the practice of traditional orchards and horticulture is vanishing, and any further development lacks the presence of the processing industry.

Most farmers of the island may be willing to convert organic, to use renewable energies and to gain environmental awareness. For these farmers, conversion has two prerequisites: the first one is a financial support during the years of conversion, and the second is a solid market (an established set of distribution channels) for their products. The use of environmentally friendly pesticides also requires compensation. Farmers are welcoming the use of ecological active substances only if they are given the difference between the price of a cheap, conventional pesticide and the expensive eco-pesticide as compensation. According to calculations, the fund for this compensation is easily raised by allocating the money, which is coming annually from the Waterworks for the water produced within the island, among the stakeholders of agriculture.

RESULTS

It is clear that the size of the island does not allow it to become a substantial supplier in the food chain of Budapest. At the same time however, the island may play a significant role in raising public awareness of reliable food. Having an eco-island within the metropolitan area may help forming the attitude of the inhabitants towards environmental issues. Bearing this is mind; our eco-island strategy comprises of the following elements of sustainable agriculture:

Introducing the Green Point system: Conversion from conventional to organic is a serious decision that requires expertise and resignation.

To support this switch in strategy, the Green Point system that works well in Austria, Switzerland and France should be adjusted to local conditions. When applied, the environmental evaluation system (modified to local conditions) is able to measure how each individual farmer and their management strategy is able to maintain good environmental conditions. The evaluation of farms may create a healthy competition between farmers and also the distribution system of compensation paid by the Budapest Waterworks to local authorities may be adjusted accordingly.

Establishment of facilities for storing and processing green waste and organic manure: Building central storage facilities for the safe storage and composting of manure and green (organic) waste produced on the island. When appropriately handled, organic manure and green waste provide for an environmentally friendly nutrient supply and is able to replace the wide-spread chemical fertilizers.

Creating a chain of shops for the producers of the island: Creating a chain of shops on all four settlements of the island to distribute, in environmentally friendly packaging, the products of the island.

Improving the conditions of backyard livestock production: There is a definite demand among the inhabitants for backyard livestock farming and for home-made animal products as well. Environmentally safe stables, barns and other buildings that meet the requirements of the animal welfare are needed.

Establishing a horticultural farm to be operated by local authorities: There are arable lands and garden plots owned by the local authorities, where most of the raw material demand of mass catering can be produced under safe, controlled circumstances. This project should employ local residents.

Creating traditional processing units (canning, drying, mobile slaughterhouse, wool processing facilities): The marketability of local, products of certified quality broadens with increasing their rate of processing.

Table 1. A summary of the strategic objectives and areas of intervention of the 'Szentendre Island Eco-island'

General objectives	Priorities
Introduce a unified tourism evaluation system to extend the touristic potential of Szentendre island and to operate the tourism of the island accordingly.	An evaluation system for ecotourism, branding, a unified, special touristic design
	Building partnerships
	Natural, landscape friendly infrastructure
	Adapting the Kincsem National Equestrian Program
Introduce a unified agricultural evaluation system of Szentendre island and extend the supply of agricultural products, increase the potential of backyard livestock production and create a system of processing facilities.	Farms of the island operating in a Green Point System
	Green waste and organic manure should be used in agriculture and energy production
	A chain of producers' shop in the island
	Environmentally friendly backyard livestock production
	Horticulture to provide self-sufficiency
	Processing facilities for local crops
Reduce energy consumption, energy dependence and CO_2 emission of Szentendre island. Introduce environmentally friendly traffic. Promote the approach of self-sufficient local authorities	Increase the energy efficiency of local agriculture. Pelleting local waste, when applicable
	Energetically efficient official and residential buildings
	Introduce and increase the ratio of electric cars for tourism and local community traffic

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Diagnosis and Strategies for Peri-Urban Agriculture in Beirut, Lebanon

Carine Lteif, Christophe-Toussaint Soulard[1]

***Abstract* – Peri-urban agriculture in Beirut is sharply declining due to urban expansion on limited agricultural land. In this context we question remaining forms of agriculture in the peripheries of Beirut. A survey in three areas of the city reveals the subsistance of a diversified agriculture preserved by the labor of tenant farmers in a precarious situation. The question of land is at the heart of a strategy to be defined for this peri urban agriculture that appears to be maintained on a few agricultural spaces benefiting from some stability, « Wakf» lands.**

***Keywords* – Landscape, Planning strategy, Lebanon**

AGRICULTURE IN BEIRUT

Lebanon is a Mediterranean country characterized by its geographical terrain: a coastal zone long of around 250 Km overlooked by mountains from North to South. Beirut, the capital, is a coastal city of 20 Km2 and an important economic and cultural center. It hosts, and its suburbs, more than 30% of the population (Nasr & Padilla, 2004).This is the result of a strong urbanization taking place on the coast, a phenomenon exacerbated by the influx of refugees fleeing the war in neighboring Syria.

In this context, urban and peri-urban agriculture undertaken for the exclusive goal of food production appears a difficult venture in Beirut and its peripheries for several reasons. One is space limitation that is typical to Mediterranean coastal landscape in mountain terrain. A second reason is that the high concentration of urban dwellers increases the demand on housing which drastically influences the prices of land and fosters a competition to acquire them for development purposes. The latest land use management plan for the Lebanese territory, the "schema d'aménagement du territoireLibanais SDATL" (2005), sets clear criteria for delimiting agricultural zones of national interest. Though it acknowledges that half of the surface area of Lebanon is cultivable, it confines the most productive and propitious areas for agriculture to regions far from Beirut and its suburbs. Thereby, peri-urban agriculture appears to be threatened by two factors, the encroachment of built-up space on agricultural lands, and the lack of recognition of its function. In this context, what forms of agriculture appear in the peripheries of Beirut? Are there dynamics to maintain or reconquer agricultural lands? Who are the actors?

A research undertaken by Lteif in 2010 provides some preliminary answers.

Box 1. Methodology

The methodology follows three broad lines of inquiry: the first consists of an archival research, looking back at agricultural activities that characterized Beirut and its peripheries between the 17th and 20th centuries. The second is a review of available literature on urban agriculture in the world, and Lebanon. The third consists of a field survey in three different areas in the peripheries of Municipal Beirut (Lteif C., 2010)

DYNAMICS OF PERI-URBAN AGRICULTURE

Information on agriculture in Beirut and its peripheries is scarce. Available literature and field observation show that agriculture in Beirut and its peripheries appears mostly in the form of residual spaces resulting from urban sprawl (Huybrechts, 2004). In Beirut and its immediate vicinity, production in residuals spaces consists mainly of strawberries, open field cultivations of parsley, mint, thyme, and lettuce, and ornamentals (Tohme-Tawk, 2004).

Archival research has shown that there was an inextricable relationship between agriculture and Beirut. The oldest reference found on the topic recounts the description of Emir Fakhreddin's palace in Beirut and its garden full of orange trees (Jidejian, 1973). This garden has paved the way for a tradition of productive gardens that characterized the capital city Beirut in the late 19th and early 20th century (Makhzoumi, 2009). In the 18th century, Beirut nestled inside its walls was surrounded by gardens and orchards that served as a food reserve for the city (Davie, 1992). In the 19th century Lamartine described the landscape: mulberry, carob, fig, orange and pomegranate trees occupied the fields and olive trees stood behind them (Cheikh Al Wali, 1993). While agriculture has long existed in Beirut, a review of urbanism plans shows that until the civil war (1975-1990), urban agriculture was not seri-ously examined. After the debate on sustainability (1980s), the State envisioned some forms of protection. However, laws and regulations appeared not exerting any influence and it was rather urbanization and land tenure with all the related power relations that exercised a major influence (Verdeil, 2004).

PERI-URBAN AGRICULTURE TODAY: CASE STUDIES

In order to better understand the situation of peri-urban agriculture in 21st century Beirut and complement available information, a field study was undertaken in three different areas situated in the South and South-East of Municipal Beirut: Shweifat, Nahr Beirut coastal portions, and foothills.

Shweifat is situated 13 Km southeast of Beirut. The area of study has persisted as an olive grove until the establishment of the international airport in 1959 (Abed, 2004). After that, the olive-based economy started to degrade. In fact, the plain remained for a

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long time occupied by agricultural fields (since 800 CE) (BouAkar, 2005). As for Nahr Beirut, agriculture has long occupied large tracts of its coastal plain and valley where fruits, vegetables, grains and olives used to be grown. Patchworks and plastic greenhouses occupied the plain whereas terraces appeared to distinguish the valley (Frem 2009).

In Shweifat, the field survey has shown that surveyed agricultural lands are farmed by middle-aged Lebanese agricultural entrepreneurs. These are from Baalbeck (85Km Northeast of Beirut) and "Burj" (Beirut).They are renting the land from the owner and depend solely on agriculture as a main livelihood. However, in many other farms, Syrian people appeared to work the land and share the produce with the tenant. Fruit trees used to occupy the landscape in Shweifat: oranges and olives. Nonetheless, there has been a shift in production: we can actually notice the cultivation of perishable fruits like strawberries.

Figure 1.Peri-urban agriculture in Nahr Beirut.

In the lower portion of Nahr Beirut, land workers are Syrians. In some lands they appear as sharecroppers, and in others they do work the land assisted by labor from other nationalities. As for landlords, they are from Beirut, Mount Lebanon and Tripoli (North Lebanon). Information about their age was not available. This geographical area, like Shweifat, was also known for its fruit trees, mainly olives. Nonetheless, people have moved to growing vegetables like tomatoes, cucumbers and eggplants, under greenhouses and in open fields, in addition to leafy vegetables like Jew's mallow, Swiss chard and others; these are highly demanded food products and are used on a daily basis.

In Nahr Beirut's foothills or what is known as "Daychuniyyeh Valley" agricultural entrepreneurs are middle-aged and do not live solely from agriculture as is the case in the other surveyed areas. They have different professional profiles: physicians, pharmacists and traders. They do own the farmed lands and their exploitations correspond to larger exploitations of fruit trees (compared to farm lands in Shweifat and the lower area of Nahr Beirut).

LAND TENURE PATTERNS, ACTORS AND ARRANGEMENTS

The field study findings have shown that agricultural entrepreneurs in two of the three surveyed areas depend on agriculture as a sole livelihood, which indicates that these lands present an important source of revenue and are to be preserved. However, and at the same time, agricultural entrepreneurs are not the real working force (except in very few cases). It has appeared that no national working force is engaged in the production and there is no family involvement. The majority of agricultural entrepreneurs in the surveyed areas are tenants. They are renting the land from its owner. This is partly translated in the choice of production: intensive production of perishable fruits and vegetables and not cultivations requiring years to get established as is the case with fruit trees in Daychuniyyeh valley (upper area of Nahr Beirut) where many agricultural entrepreneurs are landowners.

CONCLUSION

Preliminary field findings indicate that the subsis-tence of agricultural production and choice of agricultural produce is not only dictated by geography butby land tenure and arrangements between owners and tenants as well. Therefore, the persistence of peri-urban agriculture in Beirut requires a call for a multi-stakeholder process and a participatory approach for the elaboration of sustainable action schemes. An intervention on specific types of land, like state and municipality-owned lands, "Wakf" lands, in addition to lands awaiting development and leftovers could allow preserving the remaining agricultural lands.

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Is a combination of crop and livestock production profitable and supporting sustainability at regional level?

Hein Korevaar, Marjoleine C. Hanegraaf, John T. Regan[1]

***Abstract* – For the design of new, innovative mixed farming systems at regional level, a participatory method was used, followed by a case study approach in which we assessed four differentcrop-livestock integration strategies in different biogeographical regions of Europe. One of these strategies was studied in Winterswijk, the Netherlands, and focused on land exchanges between dairy and arable farms,nature conservation on farmland and reduction of nitrate leaching. By cooperating together,livestock and crop farms could take advantage of specialisation within their own farm as well as beneficial exchanges (e.g. feed and manure) with other farms. Preliminary results showed that cooperating farms have often a more intensive farming system than non-cooperating specialised farms. It is not yet clear whether cooperation helped farmers to intensify their system, or if cooperation is required to sustain already intensive systems.**

***Keywords* – mixed farming systems, crop-livestock integration, regional level, nutrient use efficiency.**

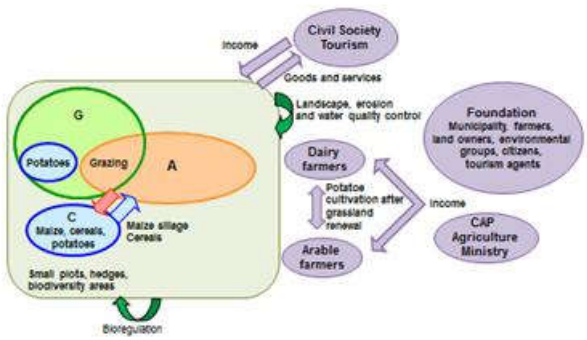

Figure 1. Regional cooperation in farming systems in case study Winterswijk.

INTRODUCTION

At present, agriculture in many European regions is characterised by a high degree of specialisation. This specialisation results in areas dominated by intensive livestock farms in which all or at least a major part of the feed is imported from outside the farm. As a consequence, these farms have an excessive animal manure surplus. In other regions crop farms rely mainly on chemical fertilizers for their nutrient inputs. In the European FP7 funded CANTOGETHER (Crops and ANimals TOGETHER) project, innovative mixed farming systems (MFS) to improve agricultural sustainability are studied at farm and regional level. Innovations in MFS are targeted at improving nutrient use efficiency and reducing nutrient losses to the environment.

METHODOLOGY AND CASE STUDIES

For the design of new, innovative MFS at the regional level, a participatory method was used (Moraine et al., 2014), followed by a case study approach in which cooperation between stakeholders and inclusion of regional characteristics were the main components.

We assessed crop-livestock integration strategies already employed in four European regions: 1) Local exchange of manure or slurry for straw or feed grain among farms in the Ebro Basin, Aragon, Spain and Cavan, Ireland; 2) Provision of high quality and protein rich forages for dairy cows through a forage dehydration facility in which coal is replaced by local produced Miscanthus and wood as fuel in Britany, France; 3) Land sharing between dairy and arable farms, combined with nature conservation areas to maintain an attractive landscape and improve water quality in Winterswijk, the Netherlands; and 4) Animal exchanges between a lowland region (Thurgau) and a mountainous region (Grisons) in Switzerland.

For each strategy, we compared the characteristics and performances of three existing farming systems: non-cooperating specialised farms, mixed farms and cooperating specialised farms. For each farming system, data were collected for ca 5 farms and then compared in terms of farming practices, input use, feeding strategies, land use, nutrient cycling and economic performances. The farm data were collected via farmer interviews for the years 2012- 2013(Regan et al., 2015).

RESULTS

In this paper we focus on the results of the case study in Winterswijk with emphasis on dairy farms, the predominant farm type in the region.

Every year, dairy farmers lease some fields to an arable farmer specialised in potato cultivation. This allows arable famers to extend their acreage by planting a potato crop on the dairy farmer's field in spring. The exchange of fields generally took place when dairy farmers were renewing their grassland. The dairy farmers used their excess slurry to fertilise the potato crop planted by the arable farmer. After the potatoes were harvested in August/September the field was reseeded with grass. The following year the arable farmer would grow potatoes on another field.

It was hypothesised that this cooperation would: 1)provide dairy farmers with an outlet for excess slurry thereby reducing their N surplus per hectare;

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and 2) reduce mineral fertiliser use on cooperating arable farms as they can rely on slurry applied by dairy farmers and on the effect of historical applications of slurry on grasslands (e.g., high soil organic matter and P status.The first part of the hypothesis was proved false: cooperating dairy farms did not avail of the outlet for excess slurry and in fact had a higher N surplus per hectare compared to non-cooperating specialiseddairy farms. As opposed to having an excess of slurry on the farm, both specialised non-cooperating, and cooperating dairy farms were importing organic slurries. This may be due to the surveyed farms having a derogation under the Nitrates Directive which allows them to apply up to 250 kg of organic N from dairy slurry on grassland instead of the 170 kg N which they would otherwise be restricted to. The second part of the hypothesis was proved true: mineral N fertiliser use was lower on cooperating arable farms than on specialised non-cooperating arable farms.

In the Winterswijk region a number of dairy farms implemented over 10 adaptations in field and farm management practices during a 2-year period (den Boer and de Haas, 2013; Hanegraaf et al., 2015) to reduce nutrient losses and improve quality of groundwater and/or surface water. Application of the practices to all suitable fields in the region would reduce losses of N by 123 t and of P2O5 by 72 t. This amounts to 8-9% of the N applied in the area as manure and chemical fertilisers and 19-20% of the P2O5 applied. Promising practices for reducing N and P losses were 'application of manure in the row (maize)', 'no manure application if soil P is high', and 'use of a nitrification inhibiter (with mineral fertiliser)'. The farmers identified the practices 'green crops' and 'raising pH' as economically attractive. They considered the practice of not applying manure if soil P is high as not economically viable, since extra mineral P2O5 fertiliser would be required and farmers would have to pay for manure disposal.

DISCUSSION

Adopting a MFS is not popular among specialised farmers because of high investments, e.g. machinery costs, and labour pressure when combining crop and livestock activities on the same farm. Livestock and crop farms cooperating together could benefit from specialisation within their own farm as well as from exchanges (e.g. land, material or livestock) with another farm. Preliminary results showed that crop-livestock integration at regional level does not necessarily lead to environmental benefits. Instead the cooperating farms have often more intensive farming practices than non-cooperating specialised farms.

It is not yet clear whether cooperation helped farmers to intensify their system, or is required to sustain already intensive systems.

Dairy farms in this region only have access to a limited number of hectares for the cultivation of an additional crop (den Boer and de Haas, 2013). This area is even more restricted by new CAP 2014-2020 and derogation regulations that pressure dairy farmers to increase their grassland area to 75 or even 80% of total farm acreage (Korevaar et al., 2014). However, on these dairy farms there are possibilities for better integration of farming and nature conservation and for targeted measures to limit nutrient inputs and improve nutrient utilisation, which is promising for improving water quality.This will require cooperation with specialised arable farms and other regional stakeholders.

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Justice issues in farmland protection policies on the urban fringe

Coline Perrin, Brigitte Nougaredes[1]

***Abstract* – This paper examines farmland protection policies through the lens of social justice. It relies on document analysis and in-depth interviews in the Montpellier city-region. We clarify the conceptions of justice underpinned by planning choices on the urban fringe. We also assess two innovative farmland management initiatives. We reveal how local actors perceive justice issues in relation to various forms of public intervention. Unravelling the social consequences of farmland protection policies highlights local conflicts or compromises. It also questions governance processes and may be useful for public policy making and assessment.**

***Keywords* – social justice, urban agriculture, planning, land-use, tenure.**

INTRODUCTION

Converting farmland to urban uses on the urban fringe is largely irreversible. The last two decades have witnessed a 4% decline in agricultural land in the OECD area (OECD, 2009). Meanwhile, urban demands for food and environmental, recreational and landscape-related services have increased the need to protect farmland in the Global North.

Farmland protection policies face high economic opportunity costs on the urban fringe. They also have social consequences because they affect the price and conditions of access to the land and to development rights. In some cases, they even result in exemptions or advantages for farmers, raising questions on equality of access to land, housing and building rights, between farmers, social groups of inhabitants, and between owners and non-owners. These social equity issues have long been overlooked in research (Jacobs, 1989) and public policy development. They deserve further attention in the context of a growing critical geography of urban agriculture (Tornaghi, 2014; Cohen & Reynolds, 2014).

In this paper, we examine farmland policies through the lens of social equity and spatial justice (Soja, 2009). Such a theoretical framework helps to explore distributive and procedural inequalities. We use it to highlight the social impact of French land policies. We also assess two local innovative farmland management initiatives near Montpellier.

METHODS

Our paper relies on qualitative data collected in the Montpellier city-region, in the south of France. The Montpellier city-region is an interesting case study because of its recent history of rapid demographic growth and suburban sprawl extending onto the former vineyards. Since 2006, a city-region-wide masterplan has harmonized land use policies among the municipalities. While it has contained the urban sprawl, public farmland protection has been widely debated.

This paper is based on data collected through document analysis (laws, planning documents, minutes of meetings, local newspapers, charters) and through in-depth interviews (with farmers, residents, government officers and staff, farmers' organisations) from 2010 to 2014 in the Hérault département[2] around Montpellier. These interviews aimed at understanding local stakeholders' practices and points of view on access to farmland, housing and building rights. We then identified local justicerelated issues through discourse analysis.

RESULTS

Large lot agricultural zoning and farm buildings In France, farmland conversion is regulated by municipal authorities through binding zoning plans. In agricultural zones, only the construction of buildings considered as "essential" to farming is allowed.However, the national law does not give a precise definition of farm buildings and how to assess the link to agricultural activity in building permits.

The way to implement the law was negotiated on the scale of département in working groups composed of representatives of the State, farmers' unions and mayors. We compared the results published in 38 charters. In some départements, non-domestic buildings (sheds, wineries, etc.) and domestic buildings (new dwellings) are authorized if the farmer demonstrates their need for the economic viability of the farm. In other départements, new dwellings are authorized only if they are required for the supervision of animals (or food processing).

Spatial variations in regulation also exist between municipalities. In the Hérault département, only wine makers and livestock farmers are allowed to build new dwellings. However, some municipalities forbid all buildings in the agricultural zone. Others have divided their agricultural zone into several spatial sub-sectors, in which the authorized farm buildings vary.

Such variations in the legislative framework for farm buildings have raised issues of distributive justice among farmers and triggered local conflicts.

Spatial grouping of farm buildings on public land

Innovative planning solutions have been tested around Montpellier to compensate for the recent restriction of farmers' building rights, while at the same time avoiding sprawl.

The most relevant initiative relies on the spatial grouping of farm buildings on public land (Nougarèdes & Soulard, 2010). A municipality bought farmland close to the village, divided it into plots and sold it to 12 local farmers to build their dwellings and storage facilities. Land prices were below those of the market. Such an agricultural hamlet raised two social equity

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[2] NUTS 2 European administrative level (Nomenclature of Units for Territorial Statistics).

problems: i) the unequal access to the hamlet among farmers, ii) the unequal access to housing and to building land between farmers and other (sometimes poorer) inhabitants.

Land access in a public agricultural park

The 2006 city-region-wide masterplan planned two agriparks, i.e. peri-urban perimeters where agriculture must be protected and multifunctional, combining production, short food supply chains, landscape and biodiversity management, and leisure.

In 2010, Montpellier metropolis bought the 192 ha Viviers estate for implementing the agripark concept. However, the characteristics of the farmers who were chosen as tenants put the fairness of the selection in question. Most of the 110 ha of farmland was rented to farmers whose products (grapes, cereals) and business model do not contribute to the above-mentioned objectives of the agripark. None of the rental agreements includes environmental clauses. Less than 20% of the land is organically cultivated. The rental agreements range from 1-year to 18- year contracts. And building rights vary among subsectors within the park. Some interviewed farmers criticized the lack of publicity and the weight of personal networking during the selection procedure. The whole project lacks an open and participatory decision process.

DISCUSSION AND CONCLUSIONS

Our results show that social justice issues have been overlooked in French public policies aimed at protecting farmland. The exclusionary effects of landuse regulation are well known (Ihlanfeldt, 2004; Daniels & Lapping, 2005). However, French agricultural zoning creates also inequalities among farmers and with other inhabitants, and the various theories of social justice shed new light on this issue. In a libertarian perspective, owners and farmers require compensation for the loss of individual building rights. In a utilitarian perspective, some State representatives consider inequalities as an unintentional and unavoidable by-product of farmland preservation policies.

The two innovative planning solutions raise other equity issues. In a Rawlsian perspective of justice as fairness, they do not favour the least advantaged members of society and they do not offer a fair equality of opportunity. Following Young's theory of justice (1990), French farmland protection policies even appear imperialist: policy instruments were locally negotiated with dominant farmers' unions. They have advantaged local wine growers (already running a farm). And they have excluded farmers with less political power and/or capital (market gardeners, new farmers), even though those would probably have better supported the multifunctionality of agriculture, which is an important rationale of farmland protection policies on the urban fringe.

Such results open a discussion on the aims and rationales of public policies. Planning choices regarding farmland conversion on the urban fringe underlie diverse conceptions of justice, that echo or conflict with individual demands ranging from the distribution of development rights between owners, to the various social classes' right to housing or access to land, and the preservation of the environment and quality of life or food issues.

Focussing on local actors' feelings of injustice and making their diverse conceptions of justice explicit is a good way to unravel the social consequences of public policies. It highlights local conflicts or compromises. It also questions governance processes and can be useful for public policy making and assessment.

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New forms of agricultures in the sprawl as vector of "productive landscape"

Fulvio Adobati, Maria Felicia Della Valle[1]

***Abstract* – The main focus of the paper is the analysis of the opportunities for new functions that sprawl may serve linked to agricultural network and food system. Urban agriculture in peri-urban zones is considered as one of the strategies to contribute to more resilient urban food system. The policy scientific debats considere its potential co-benefits and contribution to community organisation, city greening, waste management, food chain and food self sufficiency.**

In this territorial zones a different form of spatial quality reigns and different rules are applicable. Moreover, this middle condition entails many side effects. For example, the mixture between city, countryside and nature provides a different view of the relationship between people and settlement (landscape diversity).

An interesting challenge is defining rules about private back-yard, public green, capable to integrate the planning of urban agriculture as productive landscape of the sprawl.

***Keywords* – productive landscape, urban sprawl and self sufficiency, partecipative planning process**

INTRODUCTION

The "urban sprawl" or "horizontal city" occupies a considerable part of the urban areas in many parts of the world. By the way, debates on the urban question continue to proliferate and intensify within the social sciences, the planning and design disciplines (Brenner N., Schmid C., 2015). Its contribute to the growth special related to and activation of the surrounding rural areas could be implemented. The condition of the urban sprawl, on one hand, can be characterized by fragmented space, invested by rapid changes and open boundaries; on other hand can be recognized as a context in which multiplicity and diversity are prominent.

The phenomenon of sprawl is one of the main drive of change in future scenario linked to a growing population and its food self-sufficiency in peri-urban zones. If we consider the sprawl as a distinctive element characteristic feature of the contemporary city, one of its most peculiar (Secchi, 2015), it should be primarily understood as a process of expansion of the urban way of life in agricultural areas, but not only as physical growth of cities (Lanzani, 2011). The positive effects of urban and peri-urban agriculture and its basic perspectives linked to food production can generally be observed and reflected primarily through the facts that this specific kind of agriculture provides safety and quality food, increases incomes and preserves natural resources and environment. Due to its significant economic, environmental and social impacts, the issue of periurban zones, the peri-urban agriculture development (as an activity that implies a number of interaction in these areas) and landscape planning are the subject of discussions in many European forums and documents. In order to preserve the peri-urban agricultural zones from the city's constant need for land (for urban growth, industrial and territorial development and infrastructure), some guidelines should be followed: a) applying the instruments for land use and land tenure in peri-urban zones (which will be a result of the instruments of regional and urban planning in the European Union, at national and regional levels); b) reinforcing the principle of subsidiarity (the responsibility of local authorities) at the municipal level planning; c) introducing an obligatory study on the agricultural impact, which will consider all the planned land use changes in periurban zones (EESC, 2004;). In recent years, multifunctional agriculture, multifunctional landscape and multifunctional land use have been a common subject of scientific research and programmes (PURPLE 2012, SUBURBFOOD 2013) In most cases, researchers were focusing on developing strategies concerning the preservation of multifunctional urban agriculture and diversification activities on multifunctional farms, but less on the impacts of multifunctional use of agricultural land (Živanović Miljković, 2012).

If new forms of farming are emerging and the systems left behind after the modernisation of agriculture are re-emerging, the agricultural development in peri-urban areas remains largely unknown. There are several peri-urban dynamics that are expressed at different organisational levels. The differentiation of peri-urban areas is an intrinsic quality that zoning statistics or sectorial developmental models do not fully explain. One of this lack is related to the food self-sufficiency potential of growing areas and mapping the food system at city and regional level.

The project presented here aimed to evaluate the productive potentiality of backyard gardens in the area of Great Bergamo and their connections with food system. The aim is to build a sustainable agro landscape evolution scenario in a peri-urban area using an integrated framework designed to combine social demands for multifunctionality in agriculture and define efficient as a function of market and nonmarket net benefits at the landscape level.

STUDY CASE AND METHODOLOGY

Bergamo, in Milan urban region, representes a relevant example for green infrastructure, linkage between urban and periurban area. On the other hand low density areas have similar characteristics to Milan urban region.

Significant and growing are the initiatives of urban horticulture, especially related to the schools as school gardens program "horticulture and gardens for schools that grow: grow projects and sow knowledge" which

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has received recognition for Expo 2015. With a view to developing a system of food the educational project "I think local, I eat global" active from 2011 connects the canteens-drainer tics associated with local producers Association in farmers Coldiretti. It also keeps track of capillary diffusion of fair trade groups, over seventy gathered in a provincial network. Despite the growing of multifunctional agriculture, there remain some critical factors: agricultural land can be used are limited, land consumption above average, fragmentation and lack of coloration in agriculture, lack of coordination rolement of local institutions.

The methodological framework consists of four main steps. In step one, we have identified low density fields such as codified in database land use DUSAF4-2012 (Lombardy Region). In step two we have calculated the media incidence of growing green areas through model zones only in dwellings backyard, (excluding other green areas). The result of analysis has given a percentage of growing green avaible of 42%. In step three we have extended the average to the Great Bergamo area (49 municipalities, 475,559 inhabitants, land area 34,150 ha, low density area 4,650 ha) for what concerne low density zones. Growing areas so calculated amounts to 1,953 hectares. The model-based exploration, involving allocation of the growing horticultural in the landscape, has given a large set of landscape scenario. We have different patterns that generate set of alternative landscapes, with productive and social/leisure activities integrated with existing green open spaces.

CONCLUSIONS

Peri-urban areas are often characterized by overlaping of different land uses as a result of competing interests. In Bergamo they need to be reconnected. The necessity to re-establish the balance between urban areas sometimes have problems to maintain sustainable multifunctional use of agricultural land and alternative food networks as desired by population. On other hand green spaces in peri-urban zones are environments with important recreational and leisure activities and that they thus provide beneficial goods for urban community (so called "ecosystem goods" or "quality of life" factors – biodiversity, air quality, water, health, recreation), represents a green social infrastructure development. Referring to the role of spatial planning interesting the recommendation proposed by the American Planning Association: *"(…) land use planners may use growth management strategies to preserve farm and ranch land, or recommend commercial districts where restaurants and grocery stores are located, or suggest policies to encourage community gardens and other ways of growing food in communities. Economic development planners may support the revitalization of main streets with traditional mom-and-pop grocery stores, or devise strategies to attract food processing plants to industrial zones. Transportation planners may create transit routes connecting low-income neighborhoods with supermarkets, and environmental planners may provide guidance to farmers to avoid adverse impacts on lakes and rivers. This policy guide seeks to strengthen connections between traditional planning and the emerging field of community and regional food planning (…)* (APA, 2007, p. 2).

In this perspective agriculture and green spaces in peri-urban areas should have the goals which will make the whole zone sustainable; it is necessary to promote the concept of multifunctionality in the planning process of peri-urban zones, as the basic concept which supports the sustainable development of numerous interactions in these zones.

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Land use and balance between the cities and the country, the case of Lombardia

Roberto D'Autilia, Ilaria D'Ambrosi[1]

***Abstract* – In 2007-2008 years the urban population exceeded, for the first time, the rural one. The growth of the urban population increases the urban soil, raising the need of methods to measure and control it and to make stable the balance between urban and agricultural soil. In recent works the hypothesis of non-linear dependence of the urban soil size on the population has been considered, and a power law to describe this dependence was introduced. The data analysis of 3646 cities made possible to estimate the parameters of the model and to verify the consistency of such allometric hypothesis. In this theoretical framework we model the urban population dynamics driven by the local agricultural resources needed for the development and the maintenance of the population and for the population growth. The urban growth of the peri-urban areas entails the decrease of the agricultural ground and the reduction of food resources, thereby limiting the population growth. The phenomenon may seem small in size, but the non-linear relationship between soil and population could make incontrollable the expansion of the cities. It is therefore necessary to set limits to the urban expansion by establishing a balance policy between the city and the country. The balance, measured by the carrying capacity, depends on the given allometric model. We analyse the evolution of the land use in Lombardia (Italy) from 1954 to 2009 to identify the carrying capacity and the urban sprawl of its twelve provinces. The results of this analysis show that, within the modelling assumptions, only few provinces can sustain the nutritional needs of the population. In larger cities the population exceeds the number of persons to whom the surrounding agricultural areas can provide food. The method also allows the identification of the areas where the phenomenon of urban sprawl is stronger. Finally some planning strategies are suggested to limit the urban expansion according to the predictions of the model.**

***Keywords* – Carrying capacity, Urban growth, Local food.**

INTRODUCTION

The Malthusian models can be used to study the food sustainability of the cities in relation to their spatial extension (D'Autilia et al. 2015). Urban areas are expanding mainly inside the agricultural lands under the pressure of the urban population growth. At the same time the rural areas around the cities provide, in the local food nutrition framework, the resources needed to maintain the population of the cities and to increase it. If we know the functional relationship between the urban soil size and the number of its inhabitants (D. Helbing et al. 2007) it is possible to identify a population dynamics to estimate the carrying capacity of the whole area. Using this modelling approach we measure the possibility to feed people through local food, for the twelve provinces of Lombardia, the most populated region in Italy. At the same time we exploit the model to identify the phenomena of urban sprawlby means of the comparison of the quantities characterising the expansion of urban centres with those of the agricultural areas. The results provide an evaluation tool for the urban planning strategies.

THE MODEL

To measure and predict the growth of the urban soil, we need to know the functional relationship linking the spatial dimension Y of the city to the number N of its inhabitants. Assuming that this relationship is given by

$$Y=Y_0N^{\beta}$$

it is easily verified that for the Lombardia region the statistical significance is very high (Adj-R_2 = 0.91) for the data of the 1530 municipalities measured for the years 1954, 1999, 2007 and 2009.

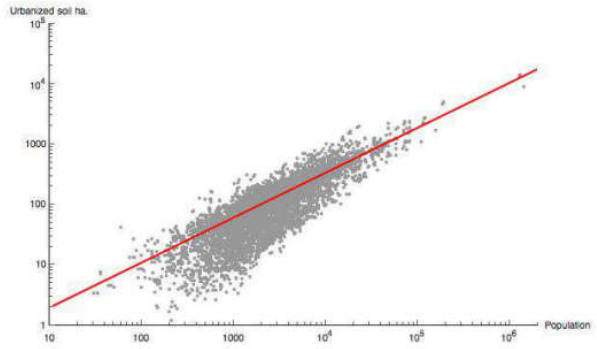

Fig. 1 the functional dependence of the urban area by population, providing the values Y_0=0.25, β=0.74, $AdjR^2$=0.91.

The quantity Y_0 is the urban soil needed by the first inhabitant (N=1), the person who does not share infrastructures, and β> 0 is the exponent measuring the amount of the shared urban space. For many urban resources, the β<1 values grant the economy of scale (D. Helbing et al. 2007) for the city. If we subtract the urban soil to the initially available area C, we get the soil $C-Y=C-Y_0N^{\beta}$ available to feed the population. Following (D'Autilia et al. 2015) we write the equation of the population dynamics as

$$C-Y_0N^{\beta}(t)=RN(t)+E\ dN(t)/dt$$

where R is the soil needed to feed one person, E the soil required to grow the population in a time interval, and t is the time. The limit for very large t of the solution of Eq.2, gives the carrying capacity in terms of the number of people who can be fed with local food

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when the cities expand at a rate given by the exponent β.

THE DIETS

By means of the data of the Italian National Institute of Statistics we identify the land required to feed one person as a function of the diet and the agricultural productivity of the area. The dietary habits can be estimated on the basis of EFSA data (EFSA 2008). The Lombardia region analysis shows that the land use induced by the diets can vary in a range from 0.14 to 0.85 ha. The main difference is due to the presence of meat and added fat.

RESULTS

The carrying capacity is given by the asymptotic solution of Eq.2, and does not depend on the E term which determines how fast this limit is reached. The carrying capacity as a function of β is plotted in Fig.2 for given R and C, and shows the presence of a critical β value, beyond which the carrying capacity falls steeply.

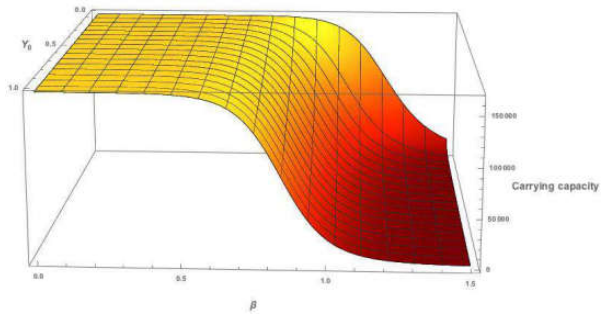

Fig. 2 The carrying capacity as function of Y_0,β, with C=30000 ha and R=0.14 ha.

For the Lombardia the data show that Y_0=0.25 ha, β=0.74, values too high to ensure sustainability through local food. Also, if we measure for the twelve provinces of Lombardia the values (Y_0, β) excluding the data of the most populated cities, we see that β tends to increase, showing the negative effects of urban sprawl on people nutrition in this region. If $\Delta\beta$ is the difference between the β and the $\hat{\beta}$ the value measured excluding the most populous cites, then $\beta-\hat{\beta}=\Delta\beta<0$ is an indicator of the urban sprawl, as shown in Table 1.

Table 1. The values of Y0, β, carrying capacity (CC) and β for the twelve provinces of Lombardia, calculated for the optimal diet R=0.14.

Province	Y_0	β	CC	population	Δβ
Bergamo	0,17	0,79	825778	1098740	-0,14
Brescia	0,21	0,81	1517740	1256025	-0,25
Como	0,19	0,79	281428	593184	-0,12
Cremona	0,21	0,81	1086120	363606	0,01
Lecco	0,25	0,75	185355	340167	-0,18
Lodi	0,35	0,72	477502	227655	-0,01
Mantova	0,49	0,75	1430080	415442	-0,12
Milano	0,21	0,77	995780	3145246	0,04
Monza e Brianza	0,04	0,93	239446	808117	0,09
Pavia	0,31	0,76	1704950	548307	-0,04
Sondrio	0,42	0,68	239936	183169	-0,1
Varese	0,21	0,8	354913	883285	0,03

CONCLUSION

The analysis of the (Y_0,β) values of Eq.1 shows that in Lombardia the current expansion of the urban areas is incompatible with the maintenance of an agriculture able to feed the people. It is therefore necessary to contract the cities through strategies of infrastructure improvements that reduce the value of β. The urban sprawl should be reduced by returning to the country its primary feeding function. The management of the global flow toward the cities should ensure food autonomy to the cities by means of the protection of the urban-rural system and the densification of the urban areas, without impairing the quality of life of its inhabitants (G. Billen 2012). The proposed method can be a valuable tool to measure the effectiveness of these planning strategies.

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WG9 - Land-use transformations

Around the world society is increasingly and rapidly affected by urbanization processes. Still, the largest part of the world's land is used for agricultural activities. Contrary to some decades ago, rural land use is now seldom influenced by agriculture only. Multiple drivers affect land use changes, including various forms of urbanization, which are constantly changing and follow different development trajectories. In order to understand and fully measure such changing trends, processes of intensification/extensification of productive activities can not be separated from processes of urbanization and also of marginalization. Causes for these processes are linked to food and nutrition security, climate change, natural resources limitations and exhaustion, social and demographic processes and changing societal values and expectations. Both local and global drivers are involved, including public policy interventions together with multiple actors with different interests in land use and management. In sum such intersecting dynamics of agricultural structural developments and various forms of urbanization lead to an increasingly complex differentiation of land use. Traditional disciplinary approaches within academia cannot adequately understand these changes, and therefore cross-disciplinary approaches are needed. Neither are the current, highly sectoral policy domains able to address the policy approaches needed to ensure sustainable development of land use.
The aim of this working group is to present and discuss current research into rural land use change across and within the global north and south, and to discuss current and future policy institutions associated with these changes.
This Working-Group will look at particular land use related questions including the following:

- *What are the main trends in land-use transformations, in different geographical contexts?*
- *What are main drivers of land use change, and how do they vary, if at all, with geographical context?*
- *How is food and nutrition security affecting and being affected by land use changes?*
- *How can the different societal expectations be combined for more sustainable land use?*
- *How can the sustainable use of natural resources in urban, peri-urban and rural areas be strengthened?*
- *How are current policy approaches guiding current land use changes and with what results?*
- *How can the complexity in current land use change patterns be dealt with effectively by public policy at different levels?*

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The impoverishment of agriculture in the rural-urban fringe: an analysis through administrative data

Aldo Bertazzoli, Rino Ghelfi, Sergio Rivaroli[1]

***Abstract* – The aim of this work is to verify the possibility of exploiting administrative data to analyze changes in agricultural land use. Available data are collected yearly by authorities to manage the System of Direct Payments provided by the Common Agricultural Policy. We analyzed data on twelve municipalities located in the Emilia-Romagna Region near the city of Bologna. The period under investigation was 2001-2012. We adopted the cadastral map as the minimum administrative unit to calculate the Shannon-Weiner index of heterogeneity (Shannon & Weiner, 1963; Horowitz, 1970) as a measure of the richness of agricultural activity (spreading and diversification of crops). The results highlight a decrease of the Shannon-Weiner index decreased due to a reduction in agricultural use (mirroring an increase in urban use) and a simplification of agricultural activities.**
***Keywords* – Urban fringe, agricultural land uses, administrative data.**

INTRODUCTION

In the last several decades, a significant growth of the city to the countryside was recorded in many areas of the World and in Europe and the World Bank estimates that by 2030 industrialized urban areas will be expanded to 500,000 square kilometres.

In Italy, available data show how every day 70 hectares of agricultural land become urban. The greatest risk in planning these peri-urban areas is to forget the multifunctional role of agriculture, which instead has the potential to be fully expressed here. Indeed, within these areas a set of relationships among land, farms and new inhabitants has to be settled, causing both positive and negative effects, to which farms try to adapt as best as possible.

Understanding the changes in agricultural land use is of notable relevance for policymakers and urban planners. The socio-economic and ecological impacts of those changes require indeed appropriate policies and planning to assure the quality of life of people who live in these territories and the sustainability of their activities. Based on these considerations, there is a need to improve the knowledge of trends in land-use at the micro-level.

The aim of this work is to verify the possibility of exploiting administrative data to analyze changes in agricultural land use.

DATA AND METHODOLOGY

Available administrative data provided by the Common Agricultural Policy are collected yearly by authorities to manage the System of Direct Payments and contain information about the agricultural use of each cadastral parcel.

We analyzed data from twelve municipalities located in the Emilia-Romagna Region near the city of Bologna. With respect to this area, the Coordinated Territorial Plan of the Bologna province reflects the great pressure exerted by urban development on land availability for agricultural uses. In 1990, 75% of the province territory was used by farms, but in 2000, the amount had fallen to 69%.

The period under investigation is 2001-2012, with the exception of 2005 due to a loss of information availability. On average, the database counts more than 67 thousand cadastral parcels per year, specifying for each of them their agricultural use.

We adopted the cadastral map as the minimum administrative unit to calculate the Shannon-Weiner index of heterogeneity (Shannon & Weiner, 1963; Horowitz, 1970) as a measure of the richness of agricultural activity (spreading and diversification of crops). Starting from the Shannon and Weiner formulation and following the Horowitz adaptation, we calculated for each map the following index:

$$H' = -\sum_{i=1}^{n} p_i log_N(p_i)$$

Where:
p_i is a measure of the importance of each crop in the map (acreage of the ith crop divided by the total surface of the map) and N is the maximum number of crops in a map.

The index values have a range between 0 and 1, where 0 indicates that there is no crop within the map (the area is fully urbanized – maximum homogeneity) and 1 indicates that within the map, we found the maximum number of crops and that the area is equally distributed among them (maximum heterogeneity).

After calculation, index values are represented on geographical maps, using QGIS software.

RESULTS

Considering the 1,094 cadastral maps, in 177 of the maps, no cultivation was ever reported in the period. In 62 maps, land was cultivated by farms that applied for direct payments in a scattered way, while the land represented in the remaining 855 maps was systematically cultivated. This allows us to classify areas (maps) into three types: areas that are totally urbanized, areas in which land cultivation is only occasional and areas in which the agriculture is a characteristic element of the territory (table 1).

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Table 1. Number of cadastral maps and surfaces covered by crop cultivation (2001-12, average data).

Areas	N	Crops (Ha)	Territory (Ha)
1. Urban areas	177	0	4,246
2. Areas with occasional crops	62	473	3,643
3. Areas with crops	855	51,324	71,053
TOTAL	1,094	51,797	78,942

Overall, the average area devoted to crops in the considered municipalities amounted to 51.8 thousand hectares, which corresponds to 65.6% of their territory. If we separately consider the three types of areas, such values are very different. They are obviously equal to 0 hectares in 177 cadastral maps without crops; 473 hectares in 62 maps where crops are marginal and occasional (13.0% of the surface), and 51.3 thousand hectares in areas where agricultural crops still have a significant presence. In the latter, the percentage territory invested in different crops is estimated to be 72.2% on average.

Regarding poverty (or wealth) of agriculture as determined by the index of Shannon-Weiner, the results highlight very different levels of heterogeneity in agricultural land use, which is coherent with the rural-urban nature of the considered area. In 2001, the average level of the Shannon-Weiner index was .225, but in 2012, it fell to .207 due to the reduction of agricultural use (mirroring an increase in urban use) and a simplification of agricultural activities (table 2).

Table 2. Values of H index in different areas.

Areas	with crops		occas. crops		total	
Year	mean	std	mean	std	mean	std
2001	.284	.096	.045	.055	.225	.142
2002	.285	.100	.045	.066	.225	.144
2003	.279	.098	.038	.047	.220	.142
2004	.280	.095	.046	.056	.221	.140
2006	.282	.099	.055	.066	.224	.142
2007	.273	.094	.052	.063	.216	.137
2008	.272	.095	.046	.061	.215	.138
2009	.268	.093	.047	.057	.212	.135
2010	.269	.095	.044	.049	.213	.136
2011	.265	.096	.035	.045	.209	.136
2012	.263	.095	.032	.043	.207	.135

The reduction occurred both in areas where agricultural use was more relevant and where the presence of crops was more sporadic. In the first areas, the index fell from .284 to .263 in the considered time lapse, while in the second areas, it fell from .045 to .032.

The impoverishment of agriculture mainly occurred in areas closer to the city, but it also occurred in some "agricultural" areas where farmers are still able to gain profits by specializing their activities through the reduction of the number of crops. Actually, H index trends are very diversified. If we consider just the 855 areas where the agricultural use of land is more significant, we find out that in 555 of them the index is decreasing (64.8% of the total area), while in 311 is increasing (35.2%).

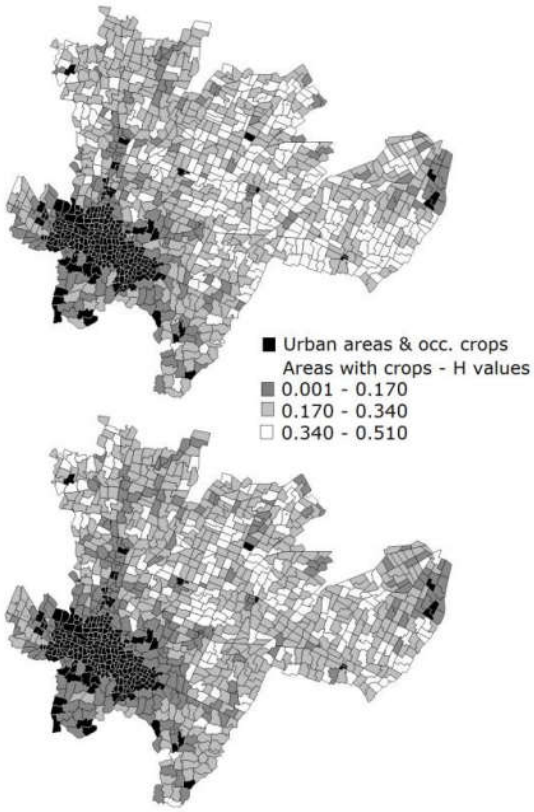

Figure 1. H index values in 2001 and 2012.

CONCLUSION

The geo-information provided by farmers in the application of CAP reflects some failures in acquisition procedures, but we suggest a wider use of these data due to their cheap acquisition and yearly updating. The index proved to be effective in detecting areas where agricultural uses are in stronger competition with urban uses. The analysis could be improved by considering the role of main roads in the spread of urban land uses.

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Urban Spatial Scenario Design Model: The impact of urban growth on Peri-urban agriculture for the Surrounding Towns of Addis Ababa

Hany A. Abo-El-Wafa, Stephan Pauleit[1]

Abstract **– The settlement area of Addis Ababa and surrounding towns has been expanding into the city's periphery at the expense of losing agricultural land.This farmland is important for food production but also provision of ecosystem services such as flood regulation.As urban expansion is expected to continue on a limited land resource, the question of where and how much of farmland the city will lose needs to be analysed.In this work, a GIS-based spatial scenario model is applied for modelling the settlement expansion into Addis Ababa's peri-urban area which includes five towns. Two spatial scenarios were applied to compare high-density condominium based development with low-density plot based development. The impact of settlement growth on the agricultural landis measured in terms of area losses and the estimated productivity for the major crops in the region. The productivity of major crops is estimated based on ratings of crop suitability maps with respect to individual land qualities, climatic and environmental conditions. Results show that the plot baseddevelopment would lead to an urban sprawl across the region while the condominium scenario would achieve a more compact form of development. Most of the settlement development would be located in areas that have low agricultural productivity according to the suitability maps forthe selected crops.Burayu is the town with the greatest losses of land suitable for agriculture and Sululta is the town with the least losses. The largest losses were among the land suitable for cultivating niger seed, rape seed, lentil, enset and peach. Implications of these scenarios for the planning of urban development are discussed.**

Keywords **– Urban Growth, Urban Planning, Urban Agriculture, Scenario**

INTRODUCTION

The urban population in Africa is expected to triple reaching 1.3 billiontowards 2050 (UNDESA, 2014).

The population of Addis Ababa is expected to increase in the next 15 years at an average annual growth rate of almost 4% reaching almost 6 million people in 2030 (UNDESA 2014), urbanexpansion is taking place in the region of Addis Ababaalong the major outlets of the city in all directions (Kassa, 2011).

This large scale urban expansionwhich mostly takes place at low densitiescauses high losses in agricultural and forested land, and directly influences the provision of ecosystem services (e.g. provision of food and timber, climate regulation, nutrient cycling, and cultural identity) (Metzger et al., 2006). Not least, agriculture in urban and peri-urban areas of African cities plays an important role in the food supply of the urban population and as an income generating activity in a mostly informal economy (FAO, 2012).

As urban expansion is expected to continue on a limited land resource, the question of where and how much of agriculture land the city will lose needs to be analysed.

The objective of the paper is to applya spatial scenario modelling approach and examine its potential as a tool to assess the impact of land use transformation caused by settlement growthon agricultural land. The model is coupled with agricultural productivity information represented by crop suitability maps for the major crops cultivated in the regional area surrounding Addis Ababa.

METHODOLOGY

The regional area surrounding Addis Ababa, the case study for this work,includes five towns which are Burayu, Sabeta,Dukem, Legatafu and Sululta. The new revision of Addis Ababa's master plan considered the planning of five neighbouring towns into the structural plan. The area of surrounding towns is 755 km2in total which is almost one and a half the size of Addis Ababa (520 km2). According to the master plan review project office, the population of the surrounding area was estimated to be 202,980 inhabitants in the year 2013,expected to reach 1,057,954 in 2023 and 1,700,000 in 2038.

USSDM is a raster based model developed in ArcGIS 10.3.1 modelbuilder where the case study area of 755km2 is represented by 302000 raster cells of 50m by 50m in size). The temporal scope of the model was set to the period between 2013 and 2038 with two modelling periods (2023 and 2038). In the USSDM application for the case study area, the urban growth influencing factorswere defined based on previous urban dynamics studies (Linard et al., 2013) and local experts input through interviews. The influencing factors were slope, proximity to road network, proximity to municipal facilities (schools, hospitals and markets), and neighbourhood. USSDM allowed settlement growth only in the proposed residential areas according to the draft master plan assuming a formal urban growth and the successful enforcement of land use zoning. For a full description of USSDM, see Printz et al. (2015).

The land use and elevation datasetswere acquired from the Ethiopian Institute of Architecture, Building construction and City planning (EiABC). The proposed residential areas were acquired from the Master Plan Review Project Office. The road network dataset was

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extracted from the open street map data resource. Municipal facilitiesdatasets, land cover and crop suitability maps for 30 agriculture crops were received from the Finnfinne (Addis Ababa) surrounding special zone of Oromia – integrated land use planning study project. The crop suitability maps were according to a set of agro-climatic variables (soil characteristics, altitude and climate).

Two spatial scenarios were applied to compare the low density scenario (LOW) that assumed plot based development proposed with an estimated population density of 150 inhabitants per ha, while the high density scenario (HIGH) assumed a condominium based development withan estimated population density of 350 inhabitants per ha.

Using area statistics, the output of USSDM (future settlement expansion)was then overlaid on suitability maps for the different crop types to calculate the areas of the different suitability levels that were lost due to the settlement expansion.

Suitability ratings are N (not suitable), S1 (highly Suitable), S2 (moderately suitable), S3 (marginally suitable) and S4 (very marginally suitable). In this paper, 2 classes were used which are no or low suitability (N, S4) and suitable (S1, S2, S3)

RESULTS

In the low density scenario, a total area of 9,945 ha of land would be transformed to settlement area by 2038. This expansion would lead to a total settlement area of 25,282 ha which represents 33% of the case study's area.

In the high density scenario, a total of 4,227 ha would be transformed to settlement area by 2038. This expansion would lead to a total settlement area of 19566 ha which represents 26% of the case study's area.

In the high density scenario, the modelled settlement development located in cultivated land is approximately 40% of that of the low density scenario.

The analysis of USSDM output and the crop suitability maps for the whole study area showed that most of the settlement development that would occur within the temporal scope of the model would be located in areas that have no or low suitability in terms of agricultural productivity with an average of 76% of the settlement are lying in this suitability range for the 30 crop types.

The towns' analysis of USSDM output and the crop suitability mapsshowed thatBurayu is the town with the most losses of land suitable for agriculture and Sululta is with the least losses. The most losses would be among the land suitable for cultivating niger seed, rape seed, lentil, enset and peach. All of these crops would experience more than 30% suitable land losses due to modelled settlement growth.

DISCUSSION AND CONCLUSION

Results showed the difference in terms of settlement growth depends on the pathway of development that is followed. In low density development, the urban sprawl would occur whereas the high density development would contribute to developing a more compact form which is regarded as promoting a more sustainable human settlements in both the devel-oped and the developing world (Jenks et al, 1996). Controlling urban sprawl and promoting a more compact form of development would help to preserve natural resources, and increase the potential to service smaller areas with infrastructure.

The analysis of USSDM output has shown that most of the settlement development that would occur within the temporal scope of the model would be located in areas that have relatively low agricultural productivity according to the suitability maps of the selected crops. This might be a contradiction to the common conception that urban growth takes place on fertile land that is highly suitable for agriculture.

Planning different towns in the regional area should consider the suitability of land for cultivating the regional crops and allocate settlements where the lowest losses are.

USSDM assumedimplementation of urban growth via formal planning and that the settlement development would be strictly limited to the designated areas for settlements, however it did not consider the informal settlement development which might be the case in reality.Further room for research would be to model informal settlements and assess the impact on agricultural area.

The novelty of the approach lies in the first time use of a spatially explicit scenario model in the regional context of Addis Ababa boundaries and analysing the impact of settlement growth on peri-urban agricultural land available.

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Land use patterns and changes in periurban areas

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***Abstract* – Urban sprawl is mostly studied from an urban planning perspective and less from an agronomical one, despite the fact that agricultural land is mostly affected by urbanization. Agriculture shows interferences and mutual interactions (physical and functional) with urban areas resulting in specific areas that are still spatially undefined in terms of both land uses. This study aims to define a spatial typology based on five combinations of patterns and functions of agricultural areas existing in urban regions. The pattern types are: isolated fields; urban belt fields; periurban agricultural lands; rural agricultural lands. We tested this typology in a Mediterranean urban region (Pisa, Italy) and compared the different composition and localization of such types, depending on the type of urban growth and the existing farming systems from 2003 to 2011. We thus performed a multitemporal spatial analysis of the different pattern types in the urban fringe. The identification was produced from a semi-supervised classification of two SPOT images. The quantitative analysis and mapping of urban-rural fringe could lead to a more in-depth knowledge on these pattern types (composition, configuration, and dynamics) in order to support specific sectoral or integrated planning of agricultural land in urbanized areas.**

***Keywords* – periurban areas; land use change; growth patterns**

INTRODUCTION

Peri-urban agriculture in Mediterranean regions is exposed to severe urbanization pressures limiting farming activities (Zasada et al. 2013). Urbanization processes in these areas reveal a complex spatial configuration influencing others land uses. Loss or degradation of land and fragmentation as well as loss of agricultural areas are the common consequences. Accordingly, research quantified and categorized the patterns of urban growth (e.g. Shi et al. 2012) but mostly excluding the agronomical perspective. Other researchers studied the influences or the impacts of urban growth on agriculture (Wortman and Lovell, 2013). Marraccini and Lardon (2012) proposed a conceptual typology linking spatial patterns with functions and agricultural areas with urban ones across a rural-urban gradient. Ac-cording to this contribution, in this work we have jointly analyzed both the short-term urban growth and the changes of land use patterns in periurban areas. Our research questions were: Which are the main land use patterns in urban regions? Which are the changes in the short-term of agricultural land use patterns? Do these changes impact the main function of periurban agriculture? The case study is the urban region of Pisa, a medium-sized Italian city located in the centre of Tuscany. The area is representative of the Mediterranean coastal plains whose urban and tourism development had an impact on the decrease of agricultural land. In this area, agri-cultural land uses are mostly characterized by arable (winter wheat, maize) and permanent crops (olive groves) (Marraccini et al., 2015).

METHODOLOGY

We tested the typology proposed by Marraccini and Lardon (2012) to the urban region of Pisa and analyzed the short-term dynamics (2003-2011) of land use patterns in order to reveal regional gradients and identify the short term impacts of urban growth on the main land use patterns. The region of Pisa has an area of 500 km2 and a population density of almost 400 inhabitants per km2. The territory mainly consists of urban core and scattered urbanization, forest and high-quality cropland (Fig.1). Due to geographical proximity, the agricultural area appears to be functionally integrated with and influenced by urban area. The methodology was adopted using the land use data analyzed at fine-scale through SPOT images and ortho-photos (2003-2011). From the spatial analysis we examine the main land use changes. Then, the patterns are measured applying the proximity from different features (agricultural and urban) as a proxy of patterns (Fig.2).

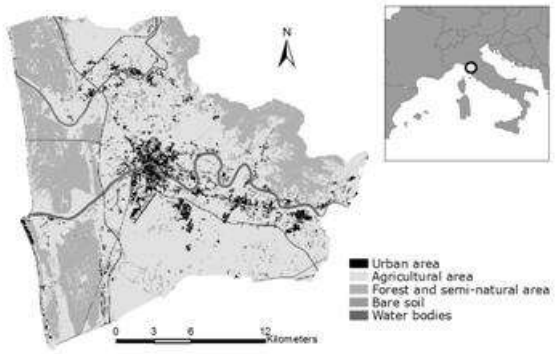

Figure 1. Location of the case study in the urban region of Pisa (Tuscany, Italy).

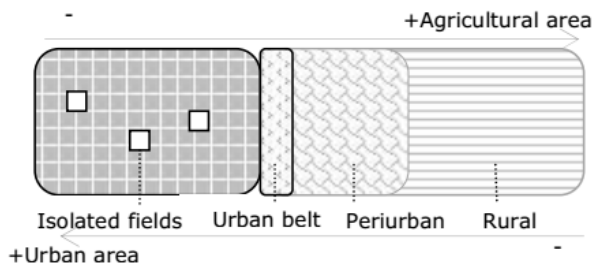

Figure 2. Description of the four patterns according to Marraccini and Lardon (2012).

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Considering a gradient from urban towards agricultural areas, we can identify a transit from agricultural plots that are within the continuous urban areas (isolated fields) to plots located adjacent to the boundary of urban area (urban belt fields); then farmland within a distance of 1 km from urban area (periurban agricultural lands); and finally agriculture located beyond periurban agricultural lands (rural agricultural lands). The spatial (qualitative) and descriptive (quantitative) analysis enabled us to assess the dynamics of the four land use patterns.

RESULTS

The annual urban growth rate from 2003 to 2011 in Pisa has been assessed to +1%. Agricultural areas decrease with a relative growth rate of -3%. Accordingly, regional gradients and patterns of change are slightly different in the urban areas surroundings on the time interval. As showed in Table 1, the isolated fields represent a low percentage of agricultural area and are reduced in size or disappear occupied by the new buildings and consequent densification of the city, with an annual growth rate of -2%. Urban agri-culture belt decreases with a lowest annual rate (-0.02%) mainly due to the fragmentation of the agricultural areas. Periurban areas represent about 40% of the agricultural area around the urban one. The rise of periurban agricultural areas (+0.2%) justifies the increase in urban areas. The rural areas also account for almost 40% and have an annual growth rate of -0.5% over time. The land use composition of the studied land use patterns is illustrated in Fig. 3. As it is possible to observe, whereas the impor-tance of arable crops decreases from rural agricultural land to isolated field, land abandonment and olive groves increase. Fig. 3 also suggests that there are slightly differences in this case study in the land use composition of periurban and urban belt fields.

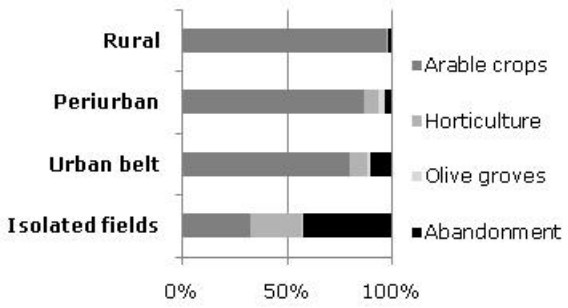

Figure 3. Representative crops (2011) in each pattern.

Table 1. Percentage of agricultural areas and annual growth within each pattern.

Patterns	Agricultural area 2003	Agricultural area 2011	Annual growth rate
Isolated	1.4%	1.2%	-2%
Urban belt	19.2%	19.8%	-0.02%
Periurban	40.5%	41.5%	0.2%
Rural	38.8%	37.8%	-0.5%

DISCUSSION

Urban sprawl allows the permanence of some agricultural areas but limiting the use and originating a particular disturbance on them through fragmentation. Isolated plots are vulnerable to disappear because of the densification of city centres, despite the important agricultural functions they sustain. Urban agriculture belt is characterized by a slow decline resisting the sprawl. Most of the farmland is located in the periurban agricultural area with the extra benefit that these areas have a direct link with urban ones. Rural areas show as expected lower levels of fragmentation due to the absence of conflicts with urban areas. Our results show no significant differences in land use patterns dynamics but an indirect impact on the main function of the farmland. It suggests the need of a deeper study about land use dynamics at higher detail (farm level) and determination of fragmentation in agriculture. This work provides a method for describing the urban-rural gradient in order to support specific sectoral or integrated planning of farmland in urbanized areas.

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Adapting Peri-urban Planning to a Post-Productivist Landscape

Paul McFarland[1]

***Abstract* - Increasing global urbanisation and the approach of peak 'everything' and a multi-faceted society (localisation, internationalisation,consumer focused, personalized) is escalating challenges for land use planning. Modes of decision-making influenced by a productivist ethos, relying on traditional ways of viewing land, are unable to cope with the increasing complexity of the post-productivist era. The peri-urban is where competition for land between urban growth and preservation of rural resources and amenity is most visible. Peri-urban land is a highly contested, multi-functional geographical space. Focusing on peri-urban land use this paper suggests a new framework to address increasingly complex land use problems.**
***Keywords* – peri-urban, land use, planning**

INTRODUCTION

Scientific evidence indicates that contemporary approaches to resource consumption are exposing limits, e.g. peak oil, peak water, peak phosphorous (Holland 2008; Haberl 2012). Contemporary modes of operation, e.g. use of fossil fuel use for power generation, transport and industrial production are leading to rapid climatic change (IPCC 2014). Resource consumption rates and resultant emissions are generally regarded as unsustainable and require new forms of energy and management.

The concept of resource limits also applies to land as the total global amount of land is fixed. Currently, more than 50 per cent of the world's population is urbanized and this is projected to reach nearly 70 per cent by 2050 (DoESA 2010, 3). Historically, settlement occurs where there is access to reliable fresh water and arable land for food production (Mumford, 1961; Diamond, 2005) and population accommodated by a combination of increasing density and outward expansion into adjoining non-urban land (Fragkias and Seto 2012). If the amount of land is fixed then urban expansion forces other land uses to relocate and compete for a diminishing supply of land.

This paper argues that contemporary approaches to land use policy are still utilizing modernist economic and market approaches to production and consumption and that these traditional modes of decision-making are unable to cope with the increasing complexity of the post-productivist era land use.

Focusing on peri-urban land use this paper suggests a new framework to address increasingly complex land use problems.

PERI-URBAN LAND USE, PRESSURES AND LIMITS

There is increasing debate over food security and the increasing awareness of the importance of agriculture to the quality of city life economically, socially and environmentally (e.g. food miles, food quality, re-engagement with our agrarian roots) (Godfray et al., 2010; Johnson et al., 1998; Mason and Knowd, 2010). Peri-urban land addresses many of these concerns by providing food production in close proximity to the placesof consumption, especially in terms of perishable produce. Fringe land also provides significant ecosystem services on which urban populations rely, e.g. clean water, biodiversity, landscape amenity, recreation space, construction materials and waste management locations. This space is, in effect, multi-functional and diverse (Holmes, 2006).

Buxton and Low Choy (2007) demonstrated that the peri-urban area is an ill-defined area containing dispersed patterns of subdivision, and clusters of non-agricultural activities dispersed among agricultural land uses. Each urban expansion into the peri-urban reduces the land available for food production of the provision of services and amenity to satisfy human needs. The land to which peri-urban activities retreat or re-locate may not be as productive or suitable as the land from which they came (McFarland, 2015).

MODERNITY, PRODUCTIVISM AND POST-PRODUCTIVISM

In this paper, modernity is conceived as the era of scientific break-throughs leading to industrialization, increasing mobility of capital and goods, and rapid social mobility from rural to urban areas. Modernity is characterised by Fordist-production, inward focused nation-states, protectionist policies, nuclear families and hierarchical social structures (Beck, 1992; Mayer & Knox 2010). Modernity in this sense commenced around the 1750's in the era of scientific discovery (the enlightenment). This then led to industrialization of cities, firstly Europe and then spreading globally. Industrialization was accompanied a shift of population from rural to urban areas. Industrial production led to contemporary market economics.

Economic productivity and growth are key features of Modernism. Western economies, such as the USA, Canada, Australia and Great Britain, are founded on productivist principles. These economies pursue a cycle of mass-production and mass-consumption, providing benefits to society through stable employment and wage structures. Protectionist policies, however, exposed inherent weaknesses in productivism. For example, during the 1980's there was a global-wide oversupply (in terms of the market, there was no 'oversupply' in terms of global hunger) of agricultural commodities due to subsidies to primary producers. Correction of this led to many countries embarking on a process of gradual reduction of protective tariffs and subsidies, thereby exposing producers to the effects of international markets (Argent 2002). This was the commencement of the post-productivist period with governments in the USA and Great Britain introducing neo-liberal principles into the political realm: smaller government, privatization and market efficiency (Allmendinger 2009).

PERI-URBAN LAND AND THE LIMITS OF AN ECOMIC GROWTH PARADIGM

A conventional macro-economic view would consider that the peri-urban values lost due to fringe urban expansion are replaced locally, or globally, under standard market mechanisms. In relation to peri-urban food production, for example, Barr (2003; 2008) would argue that loss of farmland at the metropolitan fringe is a natural progression of urban growth. This progression is a direct and obvious result of policies and social systems focused on economic growth as the measure of successful management generally. Within this approach land is treated as a commodity. As farms close to cities become economically unviable those seeking rural

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amenity on 'lifestyle' lots replace them. These in turn are replaced, ultimately by the expansion of the urban footprint. The food once supplied by the original local farms, it is argued, is replaced by imported food from further afield. When it is noted that the peri-urban landuse change described by Barr affects non-metropolitan and metropolitan areas alike (Houston, 2005) then the effects of peri-urban land use changes become more acute.

Economically, product substitution is a standard market consideration (Barr 2003). This, however, ignores the fact that urban fringe expansion is a occurring globally with similar and simultaneous displacement of non-urban services and systems. As urban footprints expand world-wide then increasing competition for declining areas from which to produce goods for markets will occur. Furthermore, all land and its services are not homogeneous. Traditional market economics is flawed in this regard. Land is not a commodity in the same way that manufactured goods are, for the latter are able to be moved about across the globe with far greater numbers of buyers and sellers (Klosterman, 1985).

A NEW FRAMEWORK FOR PERI-URBAN LAND USE PLANNING

An examination of metropolitan land use planning strategies for Melbourne and Sydney, for example, reveals that land use planning is undertaken using an incremental approach to problem-solving (Ruming & Davies, 2014). Incremental problem-solving is an indicative characteristic of single-loop learning (Figure 1). Single-loop learning (SLL) involves a process of identifying an issue, or problem, and then implementing strategies and actions that improve upon the current system as it exists. This is a process of continuous, incremental improvement. Where the main limitation is that the solutions remain within existing paradigms. Problem-solving through SSL is satisfactory where issues remain within relatively stable parameters. This method has been relied upon during the period of productivism.

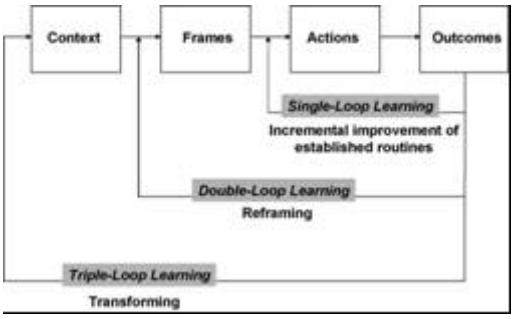

Figure 1: Sequence of learning cycles in the concept of triple-loop learning Source: Pahl-Wostl, 2009, p. 359.

Land use planning in locations such as Copenhagen, Denmark, Vancouver, Canada and Portland, Oregon utilised double-loop learning to create innovative land use policy responses. The on-going operation of these systems appears to have reverted to single-loop management.

This paper suggest a new approach to peri-urban land use management is required that adopts the concept of triple-loop learning.

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From subsistence to professional farming: the change of land use and cropping pattern in Northern China

Xiaohuan Yan, Xuexi Huo[1]

***Abstract* – This study analyses household's land enlargement behaviour and their cropping decision change in northern China. Information needed for the study was collected through a questionnaire survey in 2014, covering 1079 farm households in four provinces in northern China, namely Shandong, Henan, Shaanxi, Gansu. The sample farm households are mainly apple growers, chosen as specialized farms, among them, there are 203 households rent land to enlarge their farm size, accounts for 18.81% of total. Moreover, 177 of these households use their leased land for apple production, which takes up 93.17% of households who rent land. The descriptive result reveals that land transaction promote agricultural professionalization. The regression analysis revealed that land-holding size, subsidy, land transferability, and income per unit of land are positively related to both land rent and apple cultivation decision. Off-farm work time and negotiation time have negative impact on both land rent and apple cultivation decision. Whether household rent land from their relatives and friends and possession of rotavator positively affect household land rental decision. Whether household have tricycle is positive related to household apple cultivation decision.**

***Keywords* – subsistence farming; professional farming; land use change; cropping pattern.**

INTRODUCTION

Economic growth, urbanization and the migration of rural labour lead to the transformation of Chinese agriculture from subsistence-oriented farming to a diversified market-oriented professional farming (van den Berg, 2007; xiao et al., 2015). Evidence from numerous farm surveys suggests that larger size is an important factor to achieve greater profes-sionalization, as well as the changing cropping pattern from the primary staple cereals to high value cash crops, such as rubber, fruit, and tea et al. (Pingali & Rosegrant, 1995; Kostov & Lingard, 2002; Lerman, 2004).

Experiences form transition countries in Central Asia and East Europe show that the level of commercialization consistently increased with the increase of farm size, and the increase of farmers income attribute to the percentage of cash crop of total cultivation (Lerman, 2004).

Therefore, analyzing household land enlargement behaviour and their cropping decision are crucial for understanding the on-going transformation of Chinese agriculture.

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In order to do this, the study uses data collected from 1079 farm households in four major apple production provinces in northern China to explore factors which impact household's land enlargement behaviour and their cropping decision, and to investigate the determinants of cash crop expansion from micro level.

RESEARCH METHODS

Apple planting areas are distributed in northern China which can be grouped into two broad belts, the Bohai Rim (including Liaoning, Shandong and Hebei) and the Loess Plateau (including Henan, Shanxi, Shaanxi and Gansu). Since 1978, apple planting area in China increased gradually. After 2008, the apple planting began to expand westward and northward. In 2014, overall apple planting area reached 2.31 million hectare, which is more than three times as it was in 1978 (NBSC).

A multi-stage sampling procedure was used to select counties, towns, villages and households. The first stage was the deliberate selection of 122 counties in seven major apple producing provinces. The Probability Proportional to Size sampling method was engaged. Overall, 13 counties were randomly selected in the four provinces and 1079 households were interviewed. The face-to-face interviews collected information on households land and labour allocation, agricultural production and their demographic and economic characteristics.

Table 1 Sample Distribution

Province	County	Town	village	household
Shandong	Mengyin	2	5	91
	Yiyuan	2	3	93
	Qixia	5	5	88
	Penglai	2	4	87
Gansu	Jingning	2	7	90
	Zhuanglang	2	4	90
	Qingcheng	4	7	91
Shaanxi	Luochuan	4	4	91
	Fuxian	3	8	90
	Baota	3	6	85
	Baishui	3	3	92
Henan	Shanxian	2	4	91
Total	12	34	60	1079

Source: Field survey 2014.

This study focuses on the analysis of impacts of factors on household land rent behaviour and their cropping decision. To identify the determinants, a reduced form equation was used as follows:

$$M = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \varepsilon$$

Where M represents either (i) an indicator variable that is equal to one if the household rent land and zero otherwise; or (ii) an indicator variable that is equal to one if the household use rented land to cultivate apple and zero if not. Whereas, X1 to Xn are determinants of

households land rent and cropping decision. The dependent variables expressed are as a dichotomous variable, means logit model can be used.

EMPIRICAL RESULTS

Among the 1079 sample households, there are 203 households rent land to enlarge their farm size, accounts for 18.81% of total. Moreover, 177 of these households use their leased land for apple production, which takes up 93.17% of households who rent land. The descriptive result reveals that land transaction promote agricultural professionalization.

As shown in table 2, coefficients of column 2 to 4 are average partial effects for the probability of household land rent decision and their cropping decision.

Table 2 Regressions results

	Land rent decision		Apple cultivation	
	Coef.	Std.Err.	Coef.	Std.Err.
HH head's age (yrs)	-0.025	0.019	0.011	0.020
HH head's edu. (yrs)	-0.061	0.041	-0.052	0.044
Off farm work (months)	-0.073**	0.033	-0.12***	0.037
Farm size (mu)	0.060**	0.024	0.062**	0.024
Aver rent price	0.0003	0.0003	0.0002	0.0005
Subsidy	0.005***	0.0005	0.003***	0.001
Rent from relatives and friend	0.812*	0.427	0.586	0.407
Negotiation time	-1.12***	-0.278	-2.29***	-0.387
Transferability	1.035***	0.212	0.982***	0.239
Income/Mu	0.045*	0.0238	0.047*	0.025
have Tractor	-0.335	0.395	-0.226	0.434
have Tricycle	-0.0315	0.396	0.891*	0.460
have Rotavator	1.080*	0.440	0.349	0.473
Constant	-4.15***	1.223	-6.78***	1.416
No. of observations	1078		1078	
Chi-square	715.9		728.3	
Pseudo R2	0.700		0.723	

Source: Field survey 2014.

The regression analysis revealed that land-holding size, subsidy, land transferability, and income per unit of land are positively related to both land rent and apple cultivation decision. Off-farm work time and negotiation time has negative impact on both land rent and apple cultivation decision. Whether household rent land from their relatives and friends and possession of rotavator positively affect household land rental decision, but their impact on household cropping decision are not significant. Moreover, whether household have tricycle is positive related to household apple cultivation decision.

CONCLUSION

The empirical results show a number of factors to be statistically significant in affecting household's land enlargement and cropping decisions. Household with larger farm size and possesses machines are more likely to rent land and use it to cultivate apple. Reducing transactions costs, e.g. shorting negotiation time or make land transfer easy will stimulate households land rent behaviour. Increase apple production subsidy also encourages land transfer to apple production. The results that average rent price have insignificant impact on land rent and cropping decision, reveals that rent price plays limited role in land allocating, because of the separation of the owner right and land use right in China.

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Food is Territory. Traditions, Landscapes and Olive Economies in Lazio and Abruzzo

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***Abstract* – Olive growing played for centuries a major role in the central Regions of Italy, with acres of olive groves surrounding hill towns and hamlets, part of a strong tradition deeply rooted in the land. In Lazio and Abruzzo, olive growing dates back to the Roman era and to the early Middle Ages, when monastic orders (the Benedictines) settled in and shaped their huge estates, trying different species and improving yields.**

In recent years, even larger areas have been conferred the Protected Designation of Origin brand (Reg. CE 1263/96) according to strict technical production policies. Lately, the Common Agricultural Policy, locally enforced by rural development programs (RDPs), has enhanced the establishment of consortia collecting small producers by providing basic services: certification, presses, transparency in international trade, etc.

This paper will provide evidence of how olive growing, even within countless variations of local cultivars, has somehow preserved the structural features of the historic landscape. Their persistence in land use, which can even be read as a material survival of several tree specimens, is a tangible sign that olive farming holds its own against urban sprawl.

***Keywords* – Olive farming; Landscape patterns; Land uses.**

INTRODUCTION

This article concentrates on the hilly environments of Lazio and Abruzzo – traditionally used for olive growing, and characterised by stable and valuable landscapes – on the background of the long-term processes having contributed to their development and conservation (De Felice, 1965; Toubert, 1973).

The analysis of these landscapes and their possible evolutions – related to both the spatial point of view and the food industry trends – is made very important by two aspects.

Firstly, the close connection between vineyards and olive groves on the one hand, and hilly landscape on the other. These two cultivations were traditionally made in a mixed form, the so-called "vite maritata all'olivo", with alternate rows of vines and olives, where the olive trees served as support for the vines; they also had a stabilising function against landslides in sloped areas, sometimes artificially shaped as terraces. Nowadays there are only specialised cultivations, but still having such an "environmental engineering" function.

Secondly, there is an anthropological and social attachment to a common feeling and to undeniable values: for example, the Mediterranean diet is the first dietary habit to be included in the prestigious list of the intangible heritage of humanity. Such connection among food, nutritional properties and landscape is still alive even considering the large variety of cultivars, agricultural practices, types of production chains and market outlets.

THE RESEARCH PROGRAMME

Olive growing is of primary importance in Italy and the Mediterranean (Braudel, 2002; Sereni, 1977). Whereas, over the centuries, it has experimented different altitudes and types of cultivation, the effects of mechanisation and the needs for productivity tend to conform the behaviours of both professional and amateur farmers. Indeed, in intensive farming areas, the elements of the traditional rural landscape are disappearing, or their features are undergoing a simplification. In the areas that are closer to urban settlements, the "ghost" of urban sprawl jeopardises the least profitable farming activities, and leads to cadastral subdivisions, in turn causing a mixture of land uses and the use of olive trees as ornamental plants in the new "rural gardens" and leisure areas.

In order to build its evidences, this research makes use of two main methods:

1) the use of archive references in order to reconstruct a "historic geography", starting – in the case of Lazio – from the beginning of the XIX century;
2) the method of interviewing stakeholders, which allows to find, in specific local areas, strengths and criticalities in the relationship between olive landscape and olive production, the latter seen both as income generator and as identity generator in the domestic and international markets.

The historical research allows to trace back in time the different phases of the colonisation of hilly areas by olives groves, subsidised by sector measures (Nicolai, 1803). There were mixed landscapes (olives planted in rows or in groups), connected to sharecropping, which exists in Lazio since the end of the XVIII century. The first significant cultivations in Lazio and Abruzzo were located in the Benedictine and Cistercian abbeys, where the land reclamation works and the new agricultural practices set the bases for a solid olive growing, in particular through the selection of cultivars. Starting from the national unification, the diffusion of olive growing, even if mixed with other crops, derived from the parcelisation, and sharecropping parcelisation, following the sale of the State properties and the alienation of Church's properties and land reclamation infrastructure.

The intensification of olive landscapes and olive production takes place starting from the Fifties of the XX century, with the mechanisation of agricultural practices, supported by national and European interventions.

Since then, as witnessed by stakeholders, a land parcelisation process has occurred, leading to average surfaces of one hectare only. The largest farms (above 20 hectares) are very few as a percentage on the total, to the point that the current, large-scale land use mapping considerably underestimates the olive grove surfaces, not being able to identify spatial

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extensions below 10 hectares. In particular, the complex "land mosaics" characterising the coastal hills in the region of Abruzzo tend to be under-represented.

FIRST RESULTS AND CONCLUSIONS

Lazio and Abruzzo contribute respectively to 4% and 3% of the national olive oil production (Table 1). The last years have been particularly difficult due to the fall in production and the exposure to pests, as well as to the dramatic restructuring of the productive base, which has expelled the smallest farms from the market.

In Lazio, the percentage of farmers declaring that the entire production is for their own consumption is 82.9%. The marketing activities are mainly directed to direct sales (11.9% of the producers) and trade associations (3.2%).

In Abruzzo, 42,773 hectares are dedicated to olive oil production, corresponding to 9.77% of the regional "Used Agricultural Surface" and to 54.8% of the portion of Used Agricultural Surface dedicated to tree crops; olive growing is one of the most important productive sectors, with 54,273 farms – 3.4% less than in 2000 – of which only one quarter having olive crops as main cultivation, more than 9 million trees, and about 40 cultivars, of which a considerable part are organically grown. Olive growing is therefore important in the region, both economically and from the landscape and environmental points of view, homogeneously distributed in spatial terms. Olive growing is widespread along the coast, on the hillsides and the foothill areas, where the slopes are more protected from the cold northerly winds. Olives find their best cultivation conditions on the medium and low hills, where they still have an economic importance and, together with vine growing, represent sometimes the only intensive kind of tree crop (Aristone, Radoccia, 2014).

Notwithstanding the high quality certified by the "PDO" certification, the penetration into the domestic and international markets is still difficult and barely feasible, due to some structural criticalites, above all the competition among producers of other nations.

From a spatial perspective, such marginality is a problem, and is emphasised by the low flexibility of the market response that is typical of woody crops; it is also related to the question of the need of the human presence as an essential factor in the longterm maintenance of landscapes.

In rural areas, projects of Community initiative, such as the Community Initiative Programme Leader+ Sabina, intended to address the problem of increasing quality and profitability at the same time, in the face of a highly fragmented ownership, a general ageing of farmers, and a certain amateurism in cultivation practices.

The new RDP addresses these types of criticalities – questions related to land consolidation, generational change, the development of cooperatives, access to credit, market outlets, multifunctionality – from the point of view of the production chain, which should be able to foster development paths.

Spatial policies must support this sector instrument through programmes aimed at ensuring the control of soil consumption, preserving the environmental, cultural and economic development of rural areas, investigating more thoroughly the rationale behind the new forms of peri-urban living – not only in terms of agricultural production, but also of the use of rural services and spaces for living, especially in areas under higher human pressure.

Table 1. Figures concerning the olive oil economy

	LAZIO	ABRUZZO
HA OF OLIVE GROVES	67,438 (-9.8%)	39,873 (+6.9%)
PERCENTAGE OF UTILIZED AGRICULTURAL AREAS (UAA) IN THE REGION	11% 67,996 BUSINESSES (-39.5%) 389 PRESSES	9.8% 54,273 BUSINESSES (-3.4%) 465 PRESSES
NATIONAL SHARE	7.65	3.85
ANNUAL PRODUCTION (2007-2008)	22,668 TONS	15,872 TONS
NATIONAL SHARE	3.95	2.76
PROTECTED DESIGNATION OF ORIGIN BRAND	DOP CANINO DOP SABINA DOP TUSCIA	DOP APRUTINO-PESCARESE DOP COLLINE TEATINE DOP PRETUZIANO DELLE COLLINE TERAMANE

(National Institute of Statistics, Census of Agriculture 2010)

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Globalization of Food and Land Changes: Re-thinking Food Security Strategies in an Inter-connected World

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***Abstract* – Global value chains (GVCs) in the agrifood sector have transformed the face of global production and are reshaping world trade to an increasing extent. This raises questions about land-use transformation trends in the primary products' originating countries, in response to changinginternational consumerdemands, andthe implications for food security. To address these issues, we focused onhow Peru's land has been displaced in response to international coffee demand for the period from 1995 to 2013.Results show that consumers around the world have stimulated the growth of export-oriented agricultural production in Peru. This has created new opportunities for upgrading in GVCs; however, land-use impacts embedded in the international agricultural trade lead to new concerns over local food security. This paper argues that to understand the land-use change process and links with GVCs is fundamental to the food security challenge.**
***Keywords* – Coffee; Peru; Global Value Chain; Market Orientation; International Trade; Agricultural Frontier**

INTRODUCTION

There are different ways to approach the phenomenon of globalization of agriculture and the food system, its causes and consequences; which have been broadly discussed by Von Braun and Diaz-Bonilla (2008). One of them concerns when internationally traded foods increase as a proportion of production in response to changes in dietary patterns, consumer's tastes, market liberalization, increased income, among other causes. Nowadays, this debate becomes even more heated and controversial, because while food trade is growing, global concerns such as food security and land-use change deserve more attention by linking the global and local contexts. For future research directions, recent contributions have stressed the importance of integrate coupled human and natural systems over longer time periods, in order to understand socioeconomic and environmental interactions over distances in a more interconnected world — telecoupling (Liu et al., 2015). Of particular interest is the link between trade and land resource management, analysing the consequences for the originating country of increased international coffee trade, specifically the case of Peru.

At the global level, the prestige of the Peruvian coffee beans — which grow at altitudes between 500 and 2600 m.a.s.l. — is thanks to its special quality characteristics in differentiated markets, which has resulted in an increasing commercial demand, despite local disadvantages (Peru, 2102): (i) the structure of agricultural production is predominantly made up of small farmers, since over 82% of farms have less than five hectares, and (ii) Peru is characterized by complex topographical and climatic features, and the soil is the natural resource most threatened with the processes of degradation (severe erosion, desertification and salinization). Because of these particularities, the key research questions examined are: how have consumers around the world shaped patterns of land use across Peru; and, what are the implications for local food security?

METHODOLOGY

The variables of production quantity and harvest area of coffee were considered in order to examine land-change in Peru, and the local-global link was addressed via trade flows. Given that Peru is divided politically into 24 Departments, data from *The Office of Economic and Statistical Studies of the Peruvian Ministry of Agriculture and Irrigation* were collected separately for coffee producing Departments, 16 in total. The most recently available data corresponds to the 1995–2013 period and were statistically analysed using Partial Component Analysis (PCA) and descriptive statistics. We also undertook a documentary analysis.

RESULTS AND DISCUSSION

The influence of international trade and GVCs in the coffee sector can be observed in at least two forms. First, GVCs have transformed the face of Peruvian coffee production. Figure 1 shows that during the 1995–2013 period, coffee production increased as a result of an expansion of planted area, which has grown by 114%, and approximately 95% of total production has been destined to foreign markets. Figure 2 shows how land-use changes resulting from coffee area expansion varied over time and the response of producing Departments to growing global demand. In 2013, 89% of the total planted area was represented by the Departments of Junin (25%), San Martin (21%), Cajamarca (17%), Cuzco (14%) and Amazonas (12%).

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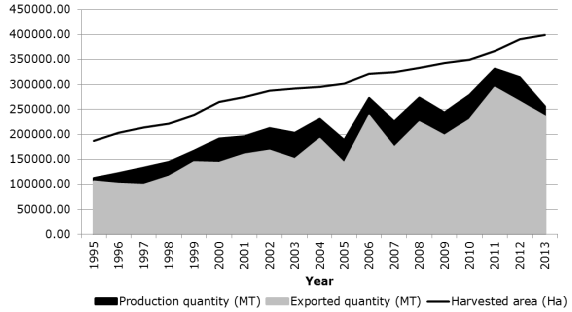

Figure 1. Dynamics of quantity production, harvest area and export of coffee beans from Peru (1995–2013).

Second, land use change impacts embedded in the international agricultural trade — through different mechanisms such as displacement, rebound, cascade, and remittance effects (Lambin and Meyfroidt, 2011) — lead to new concerns over food security. Peru's small producers involved in coffee growing activity are trying to upgrade GVCs through investment in certifications, such as organic, Fair Trade, Utz Certified and Rainforest Alliance. However they now face the challenge of maintaining bean quality,as a competitive advantage in global mar-kets, under extreme pressure from climatic eventsand phytosanitary problems, such as coffee leaf rust.

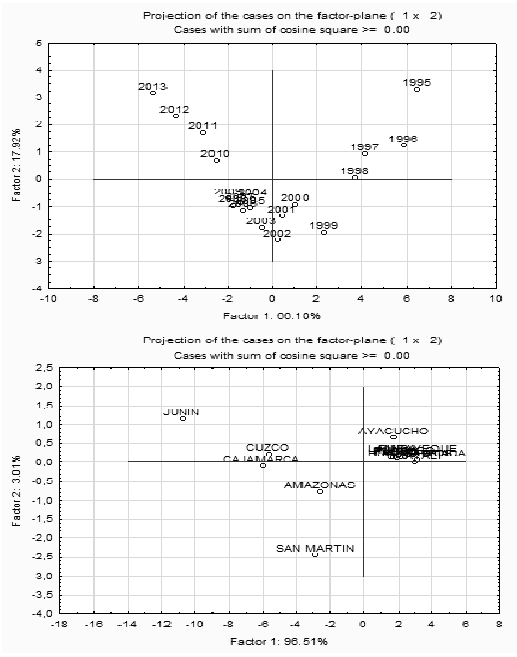

Figure 2. Principal component analysis (PCA) applied to the land area of coffee cultivation in Peru by (a) yearand (b) Department, 1995–2013. PCA distinguished the 2010-2013 period, when the rate of growth in area expansion was 14.3%, while during the preceding period (2006-2009) it was about 6.6% (Fig. 2a).The Departments' rates of growth in coffee planting area were: San Martin (1024%), Amazonas (231%), Cajamarca (90%), Cuzco (85%) and Junin (54%) (Fig. 2b).

In addition, of the total agricultural area within the largest producing Departments (Peru, 2012), the area occupied solely by coffee plantations in 2013 was 21%, 17%, 13%, 14% and 19%,for Junin, San Martin, Cajamarca, Cuzco and Amazonas, respectively. Forest fragmentation and soil fertility loss due to erosion and desertification in these Departments indirectly influence the livelihoods of both farmers and workers, as well as increase vulnerability to food insecurity. According to WFP (2014), all coffee producing Departments in Peru are categorized as highly or severely vulnerableto the potential impacts of climate-related disasters on the food security and sustainable development of entire communities.

The persistent pursuit of food security has been constantly drawing attention from researchers, but in a world more interconnected by trade it is necessary to include the local-global link in the research agenda. Although GVCs are not a panacea, they may be part of a long-term strategy to promote sustainable agricultural development for food security instead of being only a competitive market strategy. To do so, decision makers in Peru — where reducing poverty is an important policy goal — need to consider the role GVCs and land management play in building food security, then public policies should focus on encouraging strategic alliances between value chain actors and enhancing agricultural productivity rather than expanding the agricultural frontier.

CONCLUSION AND MAIN IMPLICATIONS

Our results provide insights into: (i) how consumers around the world stimulated growing export-oriented coffee production in Peru during the 1995-2013 period and especially since 2010, and (ii) how land area under coffee cultivation has been displaced. We outlined how the globalization of food has created both new opportunities and new challenges for local food security, closely linked to GVCs and land-use change. Therefore, food security goals may be achieved by creating new strategies linking GVCs and land management.

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"Contesting climate change policies" Actors, climate change and land-use transformations in the south-coast region of Jalisco state in western Mexico

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***Abstract* – Climate change is an issue of political and scientific concern and new policies have been formulated to mitigate its effects. Perceptions and views of local stakeholders are not often taken into account. This contrasts the fact that the importance of stakeholder participation is now recognised and the development of new governance schemes has become a commonly -used policy instrument. In the period 2012-2015, a European-Latin American research project (titled The Role of Biodiversity in Climate Change Mitigation - ROBIN) was developed with the goal to describe and analyse the role of biodiversity and its importance in mitigating climate change. Among great many activities, it sought to understand the perceptions and opinions of regional, state and federal stakeholders regarding land-use transformation and climate change. From our results in western Mexico contradictions emerge between different stakeholders coinciding in the same territory. In this sense, clear stakeholder-related perceptions and opinions could be distinguished: views from local stakeholders substantially differ from stakeholders external to the region. Moreover, power relations shape social relationships. A notable mistrust was identified between regional stakeholders and those from governmental institutions. We end this paper with a discussion on stakeholder participation in climate change policies and actions.**

***Keywords* – Land-use transformation, climate change, local view an knowledge, western Mexico[1]**

INTRODUCTION

Climate change has become an issue of great concern in political and scientific fields at both global and national levels. Therefore, new policies and programs have been formulated that seek to mitigate the negative effects of this phenomenon. However, perceptions and views of stakeholders living and intervening in regions affected by climate change and submitted to new policy implementation is not often taken into account. This contrasts the fact that the importance of stakeholder participation is now generally recognised and the development of new governance schemes has become a commonly -used policy instrument.

Based on the above, in the period 2012-2015, an EU-financed European-Latin-American research project (titled The Role of Biodiversity in Climate Change Mitigation - ROBIN), with case studies in Bolivia, Brazil and Mexico, was developed with the goal to describe and analyse the role of biodiversity and its importance in mitigating climate change. Amongstothers, it sought to understand the perceptions and opinions of regional, state and federal stakeholders regarding land-use transformation and climate change.

METHODS

In this short paper, we show results from the ROBIN project from the Chamela-Cuitzmala watershed in the south-coast region of Jalisco state in western Mexico. More precisely, we present the results of several workshops that we organized in the region, analysing the testimonies of the main stakeholders involved (farmers, municipal authorities, state and federal civil servants, opinion leaders, etc.). During these workshops, different participatory methods and techniques were applied, such as group discus-sions, participatory mapping, the Metaplan tech-nique, and Fuzzy Cognitive Maps.

RESULTS

During the workshops that we organized, the testimonies of farmers and other local and regional players in two municipalities in the coastal area of Jalisco, in western Mexico were discussed and sistematized. These testimonies revolved around ecological, economic, social and political changes local and regional actorsobserve in the region where they live, as well as the factors and actors that caused them. It also focused on both the benefits and the disadvantages of these transformations, including a discussion about who stand to gain and lose.

From the testimonies, it becomes clear that local and regional actors have a vast knowledge of what is happening in the environment where they live and work. In this regard, local actors agree observed strong changes in the environment and in various areas of society.

We also discussed the factors and actors that explain the different transformations that occurred. Regarding these factors and actors, participants mentioned a lot of socio-environmental and economic-political factors. These factors are identified at different scales; some occur in production systems or the community, while others take place on a regional scale. Actors and their role involved in the local dynamics, as well as the social-environmental transformations were also identified, such as municipalities, mining companies, and tourism development enterprises.

Local actors have a large number of proposals for solving the changes and problems that they observe in their region and to improve the welfare of the

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population and to halt the deterioration of natural resources. In other words, the actors not only have knowledge of their local environment, but also have clear ideas how to recover transform regional sustainability, and in this sense local and regional actors posess agencies for transformation. This agency is based in the regional endogenous potential, i.e., referring to local resources, knowledge and organizational capacity available to a particular region.

It is noteworthy to mention that all the participants agreed that the region and its people have not benefited at all with the changes, but have been largely external actors in the region who have been able to take advantage. This situation is one of the explanations of distrust that local actors to external actors, among others, to different government agencies. In this sense a first task in building regional platform is building trust among the different actors, both local and external.

DISCUSSION AND CONCLUSION

Today, there is much talk about the endogenous potential of a region forpromoting sustainability,It becomes clear from our results that this potential also exists in our study area.

However, our results also indicate that contradictions exist between different stakeholders coinciding in the same territory. In this sense, clear stakeholder-related perceptions and opinions could be distinguished: views from local stakeholders substantially differ from stakeholders external to the region. Moreover, power relations shape the relationships between the different stakeholders. In this sense, a notable mistrust was identified between local and regional stakeholders and those from governmental institutions, especially state and federal level.

Because of the diversity of actors that is present in the region and the differences that exist between them, including latent and active conflicts, the first step is to activate this endogenous potential through the creation of a regional platform where the different stakeholders can meet and discuss the future of their region. This platforms first task will be trust building.

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Assessing the effectiveness of alternative designs of greening measures. The case of Tuscany region.

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***Abstract* – Environmental regulation within the CAP is conducted by design a set of environmental instruments, among which the most important are crosscompliance and agri-environmental schemes, respectively under Pillar I and Pillar II. This paper aims at assessing the ex-ante impact of alternative designs of the greening measure, with the application of mathematical programming models. The design of the alternative scenarios encompasses the identification high effectively measures taking into account farmers preferences in front of greening commitments. Effectiveness of alternative greening designs, are assessed taking into account set of environmental benefit provided by farmers located in different agricultural areas (rural, urban, peri-urban) that describe potential drivers of HNV or a measure of sustainable management.**

***Keywords* – greening; common agricultural policy; mathematical programming model.**

INTRODUCTION

The provision of public goods is at the heart of agriculture's multifunctionality. The Common Agricultural Policy (CAP) of the European Union (EU) has addressed the environmental challenge by designing and implementing a set of environmental instruments, with cross-compliance and agri-environmental schemes having the highest relevance within CAP's Pillar I and Pillar II, respectively. From an economic perspective, the externalities of agriculture on the environment have motivated CAP's supplementation with environmental regulations. Given the extent of externalities, the market cannot meet society requirements in terms of environmental goods' provision, with both positive and negative externalities of agriculture being cases of market failure. The objective of aligning the agricultural provision of environmental goods with society demand has shaped the policy design.

Moving to the new basic payment scheme under CAP 2014 – 2020's Pillar I (Reg.(EU)1307/2013), major changes involve the shift from a "historical" to a "regionalised" system and the launch of the green direct payment (Matthews, 2013). With respect to the regionalized system, Italy opted for the partial convergence to an average basic payment (flat rate) by 2019 (Irish model). According to recent simulations, the average basic payment approaches to 179 € per hectare (ha) (Frascarelli, 2014). Safeguard clauses under the partial convergence mechanism can lead farmers' unitary payments to significantly diverge between them (Frascarelli, 2014). The greening is a compulsory policy instrument aimed at remunerating farmers for the provision of public goods and ecological services, accounting for 30% of direct payments' envelope at the member state level. Regardless of the existing differences in terms of basic payment per hectare, farmers must comply each year with the same three agricultural practices beneficial for the climate and the environment, i.e. (i) crop diversification, (ii) permanent grassland maintenance, and (iii) ecological focus areas (EFA). The three commitments refer to the whole farmland. Major exemptions to greening requirements are as follows: (i) farms with less than 15 ha arable land benefit from EFA requirement exemption, (ii) farms with less than 10 ha are exonerated from crop diversification, (iii) certified organic farms are dispensed from all three commitments. Here, we provide an ex-ante impact assessment and an economic evaluation of alternative CAP's greening designs. Taking the farms located in the Tuscany Region (NUTS 2 level) as an empirical case study, we attempted to assess the impact of new CAP's greening at the farm level, with statistically significant clusters of farms being the units of analysis.

METHODOLOGY

This paper aims at assessing the ex-ante impact of alternative designs of the greening measure, within the framework of introduction of the new basic payment system. Alternative design concerns the implementation of several level of payment (both share of greening payment and the amount of basic payment) and changes in commitments (minimum amount of crops each years).

The design encompasses the identification of the optimal greening prescription: to increase the measure cost-effectiveness. The empirical analysis relies on Tuscany's micro-data from the Italian agricultural Census 2010. Data about farmers' cost are derived from the Farm Accountancy Data Network. We assess of the cost-effectiveness of alternative greening designs, by up-scaling farm-level model's results about the crop diversification index and the intensity of management (Desjeux et al., 2015).

Farmer's decision can be simulated by a discrete choice among a set of alternatives aimed at profit maximisation. Here, farmer's decisions are opting out the CAP (superscript 0), participating to cross-compliance (superscript cc) and receiving just the BP component of the direct payment, and complying with all three greening prescriptions (superscript g) and fully benefiting from the direct payment; formally:

$$\pi_i = (\pi_i^0; \pi_i^{cc}; \pi_i^{cc+g})$$

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Particularly, when $\pi_i^{cc} > 0$ farmers would opt for cross-compliance and when $\pi_i^{cc+g} > 0$ they would decide to fully implement the greening; thus:

$$\pi_i^{cc} = \left[\pi_i^0 \quad CC_i(e_{cc})\right] + (1 - \alpha)BP_i \quad l_i$$

and:

$$\pi_i^{cc} = \left[\pi_i^0 \quad CC_i(e_{cc}) \quad CG_i(e_g)\right] + BP_i \quad l_i$$

We assess the environmental benefits of the greening by means of the "HNV drivers" set of indicator. The indicator framework have been developed by and Paracchini and Britz (2010) Recently, Desjeux et al. (2015) and Bartolini and Brunori (2014) have applied that set of indicator for policy analysis purposes. HNV drivers are measured using three indicators; specifically: the diversity crop index (DCI) takes into account crop diversity in non-grassland areas; the management intensity index (MII) is intended for considering the management intensity in non-grassland areas; (iii) the livestock intensity index (LII) considers the livestock pressure over grassland areas and the provision of EFAs.

RESULTS

Tables 1 and 2 display the study results. Table 1 shows the share of farms and UAA involved in the greening, while table 2 the environmental performance of alternative greening and SFP designs. The rows display the share of payments conditioned to the compliance with greening's prescriptions and the columns alternative levels of SFP payments expressed as shares of the current level.

Table 1. Share of farmers and share of farmland covered by greening.

	Level of payments					
	-50%		Current SFP		+50%	
Gre.	f (%)	uaa (%)	f (%)	uaa (%)	f (%)	uaa (%)
0.1	53.9	58.8	56.5	69.5	96.2	82.7
0.2	96.1	81.7	96.2	82.7	96.2	82.7
0.3	96.2	82.7	96.2	82.7	97.2	98.9
0.4	96.2	82.7	97.2	98.9	97.2	98.9
0.5	96.2	82.7	97.2	98.9	97.2	98.9
0.6	96.2	82.7	97.2	98.9	97.2	98.9
0.7	96.8	87.2	97.2	98.9	97.2	98.9
0.8	96.7	94.4	97.2	98.9	97.2	98.9
0.9	97.2	98.9	97.2	98.9	97.2	98.9
1	97.2	98.9	97.2	98.9	97.2	98.9

Table 2. Value of environmental indicators associated to the derives of HNV.

	Level of SFP			
Green.	no SFP	-50%	SFP	+50%
0	0.098	0.098	0.098	0.098
0.1	0.098	0.148	0.188	0.211
0.2	0.098	0.188	0.235	0.239
0.3	0.098	0.210	0.239	0.265
0.4	0.098	0.235	0.264	0.267
0.5	0.098	0.239	0.267	0.267
0.6	0.098	0.239	0.267	0.267
0.7	0.098	0.241	0.267	0.267
0.8	0.098	0.247	0.267	0.267
0.9	0.098	0.264	0.267	0.267
1	0.098	0.264	0.267	0.267

Results highlight that both policy parameters positively affect farmers' uptakes as well the area of the operated agricultural land. The majority of the farmers with the current design of payment fulfil greening commitments. With no BPs, the model returns lower environmental benefits. Similarly, a gradual introduction of BP lead to better environmental performances.

These outcomes are determined by the introduction of the greening measure, which entails constrains over the maximum amount of nitrogen used as agricultural input. Moving from the "no payment" to the lower level of greening payment raises the value of the indicator by one third. This is mainly attributable to the positive effects of cultivating a higher number of crops to comply with the diversification requirement. Raising the payment above, the current level allow only very small environmental improvements.

CONCLUSION

We analysed the cost-effectiveness of new cap's greening by considering farmers' strategies when facing the decision of whether to apply or not for the greening payment. We simulated the environmental impacts of the measure by means of an indicator framework (i.e. HNV drivers) that has been explicitly designed for assessing the environmental benefits delivered by high nature value (HNV) farmland. Our findings confirm previous literature highlighting that the impact of the current policy design would be low.

The greening has resulted from a negotiation that has emphasised the measure itself, which in turn has few ambitions. Despite the large amount of CAP budget allocated to the measure, a few farm have not complied with the prescriptions yet.

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Territorial-dynamics information and assessment potential in addressing rural development and planning

M.Cossu, C. Sigismondi[1]

***Abstract* – Territorial complex systems show a high rate of uncertainty from both the social and the environmental point of view.**

Within the EU 2020 Strategy, the Common Agriculture Policy (CAP) could have played a significant role in addressing environmental challenges in rural areas. This chance seems to have been missed. A remarkable gap in governing rural areas seems evident between the domains of planning and sectoral policy, to which rural land management is often delegated.Such a gap opens the path to rural soil consumption.

Strategic Environmental Assessment (SEA), if intended as a continuous sustainability integration process, could help filling this gap. It can prefigure and assess partially predictable environmental and territorial scenarios in order to draw a shared and multilevel territorial frame supporting decision making. Hence, it can directly contribute to territorial management and give substance to planning decisions responding to continuous occurring changes.

The paper presents the case study of the SEA of the Rural Development Programme 2014/2020 of the Lombardy Region, in Italy[2]. It was performed in order to define and share a dynamic territory-based information and assessment approach, aiming at supporting the environmental and territorial effectiveness of the Programme and at containing the loss of rural services.

***Keywords* – decision making, environmental assessment, resilience, rural development**

THE CAP FAILURE IN ADDRESSING ONGOING TERRITORIAL CHANGES

Rural policies have to face a profound change in land use patterns occurred in the last decades. In Lombardy, in 1955-2012, the main driver leading to the loss of rural soil was the increasing of urban and anthropic areas (+246%, Fig.1)coupled with the abandonment of rural services that led to a significant increase of forest surfaces (+16%).

The new CAP for 2014/2020 could have intro-duced significant changes in encompassing inte-grated measures for dealing with the issue. Anyway, the configuration of the rural development policy at national and regional level appears to have lost the chance it showed at EU level to draft a strategic vision for rural areas and support a balanced territorial development. Notwithstandingthe expected role, Rural Development Programmes are not shaped as planning instruments, rather as funding schemes on a voluntary basis. Nor the I Pillar direct payments seem to have any potential in driving decisions on the territories, being the greening a mandatory component that can only be managed at the enterprise scale. In a word, they lack the territorial perspective.

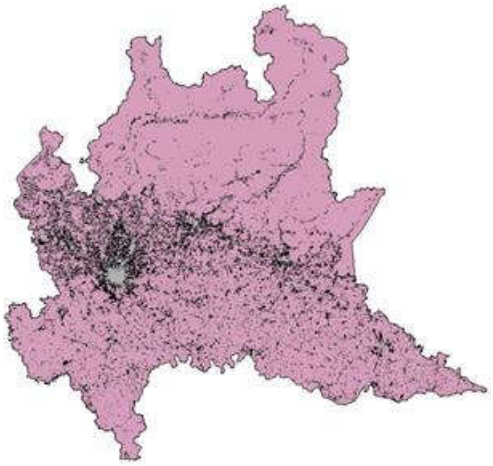

Figure 1. registered soil consumption in Lombardy Region between 1955 and 2012 (Poliedra elaboration on DUSAF data).

A TERRITORIAL PERSPECTIVESHAPING SEA AND DECISION MAKING

To have a chance to be effective, decision making process ought to face the complexities and dynamicsof territorial systems (Senge, 1990) (Jackson, 2007). Policy making and related assessments are therefore to be adaptive (Holling, 1978).

To this aim, decision making should be basedon territorial information describing the ability of territories to counter and resist as well as to adapt to changes, both planned and unforeseen. Policy making is therefore expectedto shape decisions within a continuous adaptive and reactive circle.

This requires the introduction or improvement of some crucial elements. First of all, it calls forafull acknowledgement of all decisions impacting on the same territory system. Secondly, the activation of a continuous and dynamic monitoring of occurring changes at territorial level is needed. It has to be shaped as a shared common information base for decision making as a whole, avoiding redundancies and unreliable data. The enabling of a continuous sharing process is essential, in order to include the multiple rationalities and territorial arenas on the path (Holling, ibid.) and to train them to provide a proactive contribution. Finally, the highlighting of the effects produced by every piece of decision on the territory through proper monitoring is crucial.

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[2] All the documents are available at:
http://www.cartografia.regione.lombardia.it/sivas/jsp/procedimenti/schedaProcedimento.jsf?idPiano=60200&idTipoProcedimento=1

A RESILIENCE - BASED APPROACH FOR DECISION MAKING AND ASSESSMENT

The SEA of the EU co-funded Programmes of Lombardy for 2014/2020 has been the room to define and test an approach for introducing territorial dynamics into the decision making process. Itallowed for the drafting of a regional territory–centred framework, thus stimulatingsynergies and mechanisms that would ensure horizontal coherence across all public policies having a territorial impact (European Commission, 2008).The environmental as-sessment focused on the definition of a territory-based scenario, drafting and assessing all the dynamics that act, in different ways, on different landscape units of the Region. The territorial point of view led to the adoption of an assessment approach based on the consideration of vulnerability and resilience potential (Resilience Alliance, 2007) of different territorial units in responding to policy inputs (Fig. 2).

Figure 2. general scheme of the resilience-based approach

Such responding capacity is influenced by pressures and responses partially deriving from decision making. Part of them directly come from external, un-planned factors such as climate change, illegal development, economic crisis. Pressures and responses impact and modify the structural features of territorial systems supporting their resilience (qualities) as well as the loss of functionality of elements and relationships (deteriorations) (Fig.3).

Figure 3. base scheme for vulnerability and resilience analysis

An integrated reading of the two axis has been provided to shape a Vulnerability and Resilience analysis. It combined context, "static" data, aimed at defining the level of quality of a territorial system, with dynamic interpretation of ongoing trends induced by the elements impacting on the resilience and vulnerability of the system itself.

9 Macro-dynamics have been recognized at regional level, through aggregating and interpreting context indicators. Each of them is structuredby vulnerability dynamics countering resilience dynamics acting at landscape units level. They are identified and described by the use of indicators, chosen through transparency, relevance, reliability and updatability criteria.

The trend analysis of the depicted context at both regional and landscape unit level, delivers the reference framework for both the Programmes and the decision making at regional level as a whole.

It was shaped as a base for the implementation phase, through which deliver territorialized criteria for funding and for monitoring actions.

Focussing on the sustainable use of soils and rural development, the mapping of dynamics was layered with the Rural Development Programme areas and measures, improving their territorial rationality and supporting the prevention of new soil consumption and depletion.

CONCLUSIONS

The case study shows how environmental assess-ment can drive decision making to support the resilience of the territory systems it deals with. The combination betweena "dynamic reading" of the systems, based on the effects induced on their resilient and vulnerable features, and the use of proper assessment keys, targeting the main challenges to be faced, should prevent the dispersion on generic and ineffective assessments. Rather, it allows to reflect and act on specific territorial urgencies, calling for integrated and strategic planning.

In the case study, despite a pressing call for integration, there has only been a limited available room for boosting integrated instruments among different funding schemes.

A necessarycultural work has been carried on. It is hopefully expected to advance the capacity of concerned authorities and decision makers to recognize the potential of territorial systems and to allow for integrated approaches in public action.

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Changing Landscapes and Lifescapes: The Transformation of Rural Communities, Talisay Batangas, Philippines

Filma C Calalo, Nelita M. Lalican, Rene L. Limosinero and Hospicio G. Natural Jr.[1]

***Abstract* – Because of high elevation and cool weather condition, Tagaytay City, Philippines became a tourist destination and a place for vacation to some. Business flourished in the area like leisure farms, vacation houses and small farms for urban settlers. Overlooking Tagaytay City is the Taal Lake surrounded by municipalities coming from Batangas and Cavite. All of these municipalities underwent transformation on land-use.**

One of these municipalities is Talisay in Batangas. Farms that are used for raising vegetables on the slopes of the mountains surrounding Taal Lake was transformed into subdivisions. The misplaced farmers went to the lake for fishing and putting up fish cages for some. The municipal government came up with policies on how to manage the lake to be ecologically viable socially acceptable and economically feasible. Also they provided some livelihood programs for the households.

Farmers were interviewed on how they adjusted to the changes in land-use in their locality. Some mentioned the raising of small backyard for vegetable production and integrating income from fishing to meet their daily needs. Some are engaged in livelihood programs introduced by the local government.

***Keywords* - Landscape, Lifescape, rural communities**

INTRODUCTION

Talisay (Italiano: Comune di Talizay) is a third class municipality (NSO, 2010) in the province of Batangas. It has a population of 39,600 inhabitants and a population density of 1,400 per square kilometer. It is located in the north-central area of Batangas approximately southwest of the island of Luzon 84 kilometers from Metro Manila. It is bounded by Tagaytay City in the north, Laurel to the west, Tanauan City to the east and a vast volcanic Taal Lake to the south. It is composed of 8- zone and 13 barangays.

Because of its elevation of 79 meters (259 feet) and a land area of 2820 hectares (10.89 square miles), provides a cool weather and a green surrounding not to mention the presence of Taal Lake.

In late 1990, 78 hectares from barangay Banga was converted into a subdivision with resort and in early 2000, 80 hectares from barangay Awa was converted into a golf course. Farmers used to plant vegetables, rice, corn and fruit trees in these areas. Livestock raised are pig, chicken, horse and cattle. About 50 percent of the farmers were displaced.

This study looked into the life of the farmers who used to cultivate the areas converted into subdivision and golf course about 10 years ago

Table 1. Population of Talisay

Yaer	Pop.	± % p.a.
1990	23,153	_∞
1995	26,997	+2.92%
2000	32,465	+4.03%
2007	39,120	+2.61%
2010	39,600	+0.44%

Source: National Statistics Office

Figure 1. Vacation houses

Figure 2. Subdivision

Figure 3. Golf course

METHODOLOGY

In March 2015, a reconnaissance study was conducted on barangays surrounding Taal lake. A permission was secured from the Municipal Agriculture Office for the ocular inspection. Focus group discussion was done on barangays Tumawang, Quiling and Awa with barangay officials and other residents. From the discussion it was learned that portion of Barangay Banga was purchased by a developer and converted into a subdivision with vacation houses as part of the

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highland development project. The area is close to Tagaytay which is called as the second summer capital of the Philippines. Another barangay after Banga is the barangay Awa wherein 78 hectares was also purchased and was developed into a golf course. This project was commonly called the Midland development project to Talisay residents.

The group returned to barangays Banga and Awa in June, 2015 to interview displaced farmers.

RESULTS AND DISCUSSION

From the interview conducted, there were three types of farmers identified. First group are the real farmers. They looked for other areas where they can continue farming, either their other own farm in the same or in nearby barangay. The other group are the elder farmers whom have no one in the family would like to be a farmer. These group used their money instead on sending their children to school to finish a degree. The last group, the enterprising one invested on business like buying a tricycle, jeepney, or go into buy and sell business. Some into fishing as caretakers of the fish cages in Taal Lake. Only few of these displaced farmers ventured on fish cages because the capitalization in fishing is too discriminatory according to them.

The stories are different for landowners who were paid for their land the tenants who are only workers of the farm being sold. Some farmers said theywere able to send their childern in college while others are still on the look out for food for daily sustenance.

They have an organization called "Ugnayan Agrikultura ng Barangay". Some programs are native pig production, cattle dispersal, Gulayan sa Barangay and distribution of farming inputs like seeds and fertilizer.

One success story is that of Mr. Severino Cruzat Jr who used to earn P2,000 a month from vegetables and other crops and Php8,000 from livestock before the conversion. He is also planting rice, banana, fruit trees like santol and avocado and vegetables. After the conversion into subdivision, he looked for other farm outside of the barangay and continue farming, he was able to send his children to school and were able to get a degree like a doctor, an engineer and a physical therapist.

The whole of barangay Banga is also
into flower making for export. Flower making is the number one livelihood industry in the barangay.

Figure 4. Flower making

As of this time, The Midland Project Corporation still allows farmers to use some part of undeveloped lands for crop production. The farmers said that once these portions are needed, they can use them.

The developer Highland Project in Barangay Banga assigned some portions of the property for construction of barangay hall, basketball court and health center for the community. While the Midland developer only give donations whenever Barangay Awa willask for solicitation.

Only few are receiving the Pantawid Pamilya Programa (4P's)Program of the government.

CONCLUSION

The changing landscape of a given community gave additional opportunities for changing lifescapes of the residents in rural areas. But lifescapes changes still depends on culture and values of individuals.

ACKNOWLEDGEMENT

The group would like to thank the Talisay Agriculture office, the Barangay local government officials and the farmers for providing the information.

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Analysis of spatial patterns and driving factors of farmland loss

Eva Kerselaers, Fanny Van den Haute, Anna Verhoeve, Elke Rogge[1]

***Abstract* – In many countries, farmland is converted to other land uses. This conversion is linked to structural changes within agriculture and the decreasing number of farms, but it is also caused by urbanisation, industrialisation and the changing societal expectations towards the countryside. Specifically in peri-urban areas, we see an increasingly complex differentiation of rural land use and conflicting interests among the involved actors. In order to understand the trend of farmland loss, we picture recent farmland loss in Flanders based on a comparison of Flemish LPIS-data between 1998 and 2013. In this short paper, preliminary results are described. First, we present figures on the evolution of farmland area for two cases (Flanders and Ghent). Furthermore we explored spatial planning policy as one possible explaining factor for this evolution.**

***Keywords* – farmland loss; spatial planning; farmland preservation strategies; Flanders; Belgium**

INTRODUCTION

Farmland in many countries is being converted to other land use types, such as residence, industry, roads, nature or forest. This results in a decrease of farmland area, which has for example been described in the US, China, Australia and various European countries (Kerselaers, 2012).

Loss of farmland raises concerns about issues such as urban sprawl, environmental degradation, the viability of the agricultural sector and loss of open space (a.o. Thompson and Prokopy, 2009). Seen from the urban perspective, the proximity of agriculture is more and more considered relevant in relation to ecological quality, recreational opportunities, attractive living environments, the role in climate adaptation and the reconnection of urbanites to food production (a.o. Paül and McKenzie, 2013).

The question therefore rises how the preservation of farmland can be assured. Do the current strategies, mainly based on spatial planning and agricultural zoning, manage to obtain their goals? What is the role of the European CAP for the preservation of farmland? Which other strategies can be used?

The goal of this research is to quantify the farmland loss in Flanders and to explore which driving factors could explain the observed evolution. These insights should support the development of effective policy approaches for farmland preservation. In this short paper, we focus on one driving factor, namely the role of spatial planning for guiding the preservation/conversion of farmland. Future research will also consider other driving factors such as the proximity of cities, soil suitability, private or public ownership, …

METHODOLOGY

Case study description

The research is performed for Flanders, the northern region of Belgium. Within Flanders, Ghent is chosen as a second and smaller case area. This smaller area should allow a reality check of the farmland figures and facilitates the search for driving factors.

Flanders is known as a strongly urbanised and densely populated region, yet the agricultural land use still represents approximately 45% of Flemish territory. Ghent is one of the larger cities in Flanders. It is densely populated but still characterized by more rural parts on the outskirts of the city.

Quantitative and spatial analysis

The analysis is based on the LPIS data. LPIS or the "land parcel identification system" is a database developed to support the implementation of the European Common Agricultural Policy (CAP) (EC, 2013) that contains information on the area and location of all farmland parcels. Based on the Flemish part of this database, the farmland area in Flanders and Ghent is calculated for four years (1998, 2003, 2008 and 2013[2]) and the spatial distribution of the farmland is mapped.

Starting from the spatial pattern of farmland loss, driving factors will be distinguished. To better understand the role of spatial planning, the spatial pattern is compared with the spatial plans of Flanders and Ghent.

(PRELIMINARY) RESULTS

Evolution farmland area

In Flanders, we see a net farmland increase of 27 001 ha (+4%) from 670 231 ha in 1998 to 697 232 ha in 2013. In Ghent, the area of agricultural land decreased from 3738 ha in 1998 to 3300 ha in 2013. This is a decrease of 438 ha or 12%.

The farmland increase in Flanders, which is opposite to what was expected, can partly be explained by the improvement of registration through time and the incorporation of "farmland" managed by nature organisations in the registration since 2007. When the "nature-farmland" is excluded from the calculations, a slight decrease of farmland is registered from 2008 onwards (6330 ha between 2008 and 2011, according to Danckaert, 2013).

The figures of "net farmland evolution" are the result of farmland loss in some places and new farmland use in other places. When comparing 1998 and 2013, 44 593 ha of farmland has been converted to another land use in Flanders and 71 594 ha of other land has been newly used for agriculture (-870 ha + 432 ha in Ghent). Although part of the "new farmland" is explained by the above described data improvement, these figures reveal a large volatility in the land used for agriculture.

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[2] Only figures for 1998 and 2013 are presented in this paper.

Zoning plan designation

Table 1 shows the designation of the Flemish farmland according to the zoning plans. Most farmland lies in zones that are designated for agriculture (89%). The other 11% mainly lies in zones for nature and forest and in residential areas. The increase of farmland is mainly situated in agricultural zones (+27 063). Whereas the decrease of farmland is mainly situated in industrial zones (-3140ha) and residential areas (-780 ha). This probably means that – in line with the spatial plans- the "lost farmland" is converted to industrial and residential area. It is remarkable that the farmland area increased in the nature and forest zones. However, this is probably "nature-farmland" as described above, or former farmland that has changed in zoning plan designation but not (yet) in use.

Table 1. Evolution of farmland area in Flanders categorized according to the zoning plan designation

Zoning plan	Farmland area		Netto change	
	1998	2013	Area (ha)	%
Agricultural zone	593 362	620 425	+ 27 063	+ 5
Nature and forest	31 380	37 801	+ 6 421	+ 20
Industrial zone	7 017	3 877	- 3 140	- 45
Residential zone	20 150	17 297	- 2 853	- 14
Other	18 145	17 365	- 780	- 4
unknow	*177*	*468*		
TOTAL	**670 231**	**697 232**	**+ 27 001**	**+ 4**

In Ghent (Table 2), the total amount of farmland decreased, mainly in nature and forest zones (-10%) and in industrial (-67%) and residential zones (-31%). Local knowledge of the Ghent situation confirms that farmland in Ghent is deliberately converted– in compliance with the spatial plans- in favour of nature and forest development, harbour expansion and residential areas. The nature development is even larger than appears from the data, because part of the developed nature is still registered as grassland in the LPIS data.

Table 2. Evolution of farmland area in Ghent, categorized according to the zoning plan designation

Zoning plan	Farmland area		Netto change	
	1998	2013	Area (ha)	%
Agricultural zone	2264	2275	+ 12	+ 1
Nature and forest	641	576	- 65	- 10
Industrial zone	188	62	- 126	- 67
Residential zone	245	170	- 75	- 31
Other	68	55	- 13	- 19
unknow	*333*	*162*	*- 171*	
TOTAL	**3738**	**3300**	**- 438**	**- 12**

The percentage of farmland in agricultural zones is much lower in Ghent than the Flemish average. Ghent farmers use a substantial area of land in nature and forest zones and in industrial and residential zones. Between 1998 and 2013, the percentage of farmland in agricultural zones increased though (66% in 1998 and 73% in 2013).

DISCUSSION AND CONCLUSIONS

Evolution farmland area

Based on the available figures, farmland loss in Flanders seems limited. Hence, the question rises what causes the resentment among farmers? Are some of the losses not revealed by the LPIS data? Is it the combination of the actual conversions and the conversions in spatial designations? Are the losses that do occur (like in Ghent) systematically exaggerated in the stories that circulate among farmers? Or maybe the limited land loss does have large implications for farming businesses?

Another remarkable finding is the volatility of the land used for agriculture. This might partly be explained by crop rotation, but one would expect that most of the suitable farmland stays in agricultural use, even if the crops rotate.

The role of spatial planning

To what degree does spatial planning guides preservation or conversion of farmland? In Ghent, there seems to be a clear link between the farmland conversion and the spatial plans. In Flanders, we also see the highest conversion rates in the nonagricultural zones. Nevertheless, Verhoeve et al. (2015) showed that the percentage of statutory farmland that is not used for agricultural activities is rather high (10%). On the other hand, quite a share of farmland is not located in the agricultural zoning plan designation (11% for Flanders and ca. 30% in Ghent). Therefore, one can question the effectiveness of the zoning strategy in spatial planning. In future research, we will further explore this link between spatial planning and farmland conversion.

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WG10 - Urban agriculture I. Urban agriculture and Urban Food Strategies: Processes, Planning, Policies and Potential to Reconnect Society and Food

Urban -regional- agriculture is highly valued by city dwellers as well as local authorities because it provides them with social, environmental and green amenities that directly contribute to the regional quality of life. The urban interest in the provenance of food also inspires entrepreneurs to develop innovative local food related business. Despite this growing interest, however, urban agriculture remains brittle, fragmented and without coherence. It still is a niche innovation; an innovation which is part of a burgeoning interest to integrate food in the urban fabric, i.e. to stimulate regional food systems. City authorities can take the lead in embedding urban agriculture in the urban daily life by facilitating local oriented food initiatives and business, creating networks of these local initiatives, linking national and local policies and developing a platform to share knowledge and experience. There are some successful examples around the world where authorities and the local food movement create room for a symbiotic development.

One option for a comprehensive approach to regional food systems are Urban Food Strategies (UFS) that have developed recently in leading cities across the world, like Toronto, New York and London. We refer to the term 'Urban Food Strategy' as a process consisting of how an urban region envisions change in its food system, and how it strives towards this change, in its policy, governance, planning and daily practice. Such UFS provide a new and innovative perspective on food: from regional (agricultural) development to urban policy, thus inspiring the current worldwide discussion on the future of our food system.

This working group aims at a better understanding of the functioning of these urban food strategies in terms of policy, governance, planning and daily practice. Likewise we welcome all types of papers which lead to a vibrant discussion on the potential of reconnecting society & food and urban & agriculture. Can we extract general lessons? This working group addresses the following questions:

- *Which elements do urban food strategies include?*
- *How do urban food strategies function? Which key processes and actors are at stake?*
- *How should the city govern between grass roots innovation (niches) and structural change?*
- *What is the actual impact of such strategies on how food is perceived in a city region?*
- *How could urban -and regional- agriculture be embedded in these urban food strategies?*
- *How to balance urban agriculture with other forms of land use like parks, playgrounds, real estate?*

Convenors:
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The Urban Agriculture Circle: A Methodology to Understand the Multi-functionality of Urban Agriculture

Jan Eelco Jansma, Joseph Chambers, Eva Sabas and Esther Veen[1]

***Abstract* – The lack of inclusion of urban agriculture in city planning directly affects the success of initiatives in this sector, which subsequently could impede future innovations. The poor representation of urban agriculture in planning can be attributed to a lack of understanding about itsmulti-functionalitywith the authorities. A void that the Urban Agriculture Circle addresses.The circle represent 12 urban policy themes looking specifically at those that could benefit from urban agriculture. These 12 are extracted from a survey in four major cities in the Netherlands (Rotterdam, Groningen, Tilburg and Almere) during the regional elections of 2010. Subsequently a clear and robust definition was labelled to each of the themes. For a visual effect the themes were merged in a circle diagram, representing the three angles of sustainability. The circle highlights the multi-functionality that is being seen in many urban agriculture initiatives. By having a better understanding about the multi-functionality of urban agriculture initiatives, cities can facilitate and stimulate innovations in urban agriculture in a direction that mitigate specific urban issues.**

***Keywords* – Urban agriculture, governance, planning.**

INTRODUCTION

In recent years urban agriculture has been developing strongly in the Netherlands, as it has doing in the global North. Community and school gardens pop up in neighbourhoods, innovative regional food enterprises gain ground in the outskirts of cities and farmers markets are more popular than they have been for a long time. Despite the fast growing interest in urban agriculture however, it still isa small and fragmented part of the urban fabric (Jansma et al, 2014).One of the reason may lay in the observation that urban agriculture -food production- lacks in city planning, i.e. there are afew examples in practice of food production properly planned in and around cites as a systematic approach to building greener and more sustainable cities (Van der Schans and Wiskerke, 2012: 250).

A better understanding of the multi-functionality of urban agriculture (the added value beside food production in urban context) can lead to a greater incorporation of it in planning, which in turn would stimulate further innovation. A suitable methodology needs to be created to asses and demonstrate this multi-functionality. A void that the Urban Agriculture Circle will address.

METHODOLOGY

Starting point of our journey to a suitable methodology is the assumption that if urban agriculture could contribute to urban themes, it will be easier to be adapted in urban planning. Thus, the next step was to collect urban themes. These(policy) themes were extracted from Veen and Mul (2010), who studied four major cities in the Netherlands (Rotterdam, Groningen, Tilburg and Almere) during the regional elections of 2010. The authors aggregated the main policy issues, looking specifically at those that could benefit from urban agriculture. Issues that were similar were combined, or joined under the same heading. This led to the 12 themesequally divided over people, planet and profit, i.e.: 1) inclusiveness (People – 'Our city'); 2) environmental health (Planet – 'Healthy city'); and 3) productiveness (Profit – 'Economic city'), following De Zeeuw et al (2011). Subsequently a clear definition was labelled to each of the themes (Table 1). For a visual effect the themes were merged in a circle diagram.

In order to qualify the importance of a specific theme in the aims of an urban agriculture initiative, we created weighted rankings using 1 (Unimportant) – 5 (Very Important) scale ranking. This created weighted rankings, which were then displayed in a radar graph format, allowing easy understanding about the initiatives foci. The initiatives for testing this methodology were chosen systematically. Pre-established relationships helped to know where to source the material for analysis, as well as allowing greater understanding about the finer intricacies of their aims.

RESULTS

Several initiatives are analysed with this Urban Agriculture Circle. Figure 1 present the analysis of two urban agriculture initiatives. Initiative A is a commercial city farm that focusses on (organic) food production and provides opportunities for health care, education and new business. Initiative B is housed within an old glasshouse, previously used for flower production. The initiative gives opportunities for costumers to grow fruits and vegetables all year round as well as providing upkeep and management for the clients allotments.

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Table 1. Justification of the 12 urban policy themes

Theme	Justification
Employment	The extent to which importance is placed on valuable employment for individuals
Added value	The extent to which importance is placed on developing business
Indirect Benefits	The extent to which importance is placed on creating additional (financial) value for others who were not directly linked
Attractive Neighbourhoods	The extent to which importance is placed on the contribution to aspects of an attractive area
Living environment	The extent to which importance is placed on improvingthe green quality of an area
Environment	The extent to which importance is placed on environmental issues
Climate	The extent to which importance is placed on adaptation and mitigation of climate change
Food and Health	The extent to which importance is placed on the issue of food related health
Care and Well-being	The extent to which importance is placed on providing (health) care and wellbeing programs
Participation and Cohesion	The extent to which importance is placed on creating social ties
Leisure and Recreation	The extent to which importance is placed on aspects of free-time activities
Education	The extent to which importance is placed on teaching knowledge about divers aspects of food and nutrition

Figure1 show that although the two different initiatives operate under the banner of urban agriculture, their foci vary. Initiative A can be seen as having more of a rounded view, with a focus in every category. Initiative B is showing a large weighting towards people (Care & Wellbeing and Food & Health).

DISCUSSION AND CONCLUSION

The results from this investigation identify that urban agriculture initiatives, more often than not,tend to cover multiple themes from the spectrum. The circle highlights this multi-functionality. Although these findings are of great importance, the circle need further improvement. The methodology provided here is subjective. The next step in the development of this circle is a methodology to objectify the analysis. This could work with a consistent question and verify method with a justification from the initiative as to why they are attributed these scores. Developing a consistent question and verify method will lead to a further adjustment of the 12 themes. By defining these themes, we recognised that these cannot always be perfectly separated. For example, an urban agriculture initiative could improve the attractiveness of a neighbourhood which in turn could lead to additional financial value (indirect benefits), i.e. higher value for real estate owners.

Both cities and initiatives could benefit from having a better understanding about the multi-functionality of urban agriculture. Cities can facilitate and stimulate innovations in urban agriculture in a direction that mitigate specific urban issues. The initiatives could use a better understanding of their multi-functionality to show authorities their added value to the urban fabric. Thus the circle will support urban agriculture to gain ground in urban plans and facilitate innovation within urban agriculture.

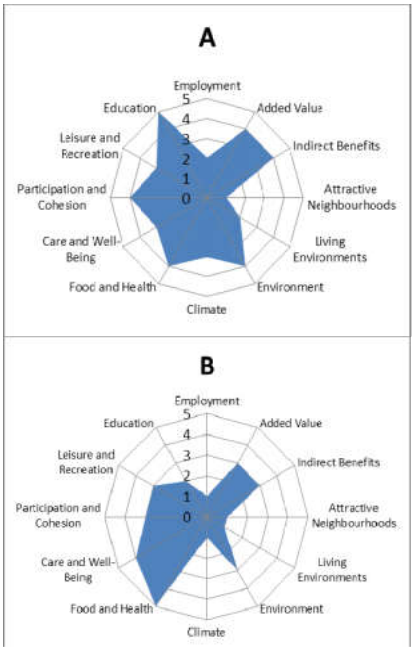

Figure 1.Radar graph of two different urban agriculture initiatives.

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The economics of urban gardening in three EU cities - examples from London, Ljubljana and Milan

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***Abstract* – Urban gardening is not a new phenomenon but it has received considerably more practical and academic interest in recent years, both in the Global North and the Global South. There are many studies available on the social and ecological aspects of urban gardening, but rather fewer on the economic aspects. Studies on economic aspects such as crop yields, inputs and outputs of production, productivity, economic margins and the contribution to home-economics in the EU are rare. While home production and subsistence have an important role to play in the Global South, its role and full potential in prosperous cities within the EU for food productivity and home economics is currently under-researched. This research compares crop production data from urban gardening (home gardening, allotments, community gardening) in three EU cities (London, Ljubljana, Milan) with commercial production in the EU and provides a model to assess the economic potential of urban gardening within a city's local agri-food system (LAS). For the analysis we use data from various sources: a 2014 survey conducted within the framework of the EU 'FOODMETRES' project, and data from the London Harvest-ometer survey as well as other published data on home gardening and commercial food production.**

***Keywords* – urban gardening, economic returns**

INTRODUCTION

Urban gardens or the so-called allotment gardens are in the world and also in Europe increasingly popular. Although this phenomenon is not new, they experience great attention from media as well as from policy makers and experts from various scientific disciplines. The beginnings of urban gardens date back to Europe in the early 18th century as a response to urbanization and industrialisation of the cities. Whit people immigrating at the beginning of the 19th century this habit began to spread to other continents. At that time, were the main reasons for gardens in the urban areas mitigation of socio-economic hardships, poverty of the working class as well as the overall weak supply of vegetables in urban areas. The most recent "boom" in gardening is connected with solving many of the urban areas problems, which are not always related to food security but rather relate to social and health problems of the population, their limited access to green spaces and the economic and cultural revitalisation of degraded urban areas. However, the recent increased interest in gardening is also linked to the increasing concern of the population about food quality and costs as well as food insecurity and self-supply (Orsini et al., 2013).

Urban gardening is type of agriculture which is much more than just growing food. It can bring multiple benefits in health, social, economic and ecological issues. Urban agriculture enhances urban food security and nutrition, local economic development, poverty alleviation and social inclusion of disadvantaged groups and sustainable environmental management in the cities (Smith and Jehlička, 2013).

In this study we concentrate mainly on economic benefits of the urban gardening for the citizens. It is a source of self-provision found to benefit households. Local residents who grow food in their backyards or in local community gardens, they can sell it in local markets, shops, or restaurants (Anastasiou et al. 2014). Some community gardens hire people to help them to organize the market, where they sell their products. In many cities poor people work and collect organic waste from households, vegetable markets and agro-industries in order to produce compost or animal feed. Many young people who want to develop their environmental, agricultural and food careers are trained in urban gardens (Corrigan, 2011).

The main aim was to analyse the phenomenon of urban gardening depended on local natural resources and to examine the economic benefits of urban gardening beyond the provision of food and the specific positive and negative externalities that the urban gardening are bringing to their metropolitan areas.

METHODOLOGY

We developed special questionnaire to analyse the phenomenon of urban gardening depended on local natural resources and to examine the socio- economic benefits of urban gardening beyond the provision of food. Additionally, the aim of this questionnaire was to get insight into specific positive and negative externalities that the urban gardening is bringing to their metropolitan areas. Questioner has 33 questions on UG and 8 questions on general typology of the gardeners. Questions were grouped in 7 sub-groups addressing different perspectives like: Growing space, Growing Methods, Skills and knowledge, Motivations for gardening, Contribution of gardening to food supply and household budget, Impacts of home growing and Household characteristics. The survey was performed via internet questioners and in some cases also with on-site interviews.

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We evaluated economic impact of urban gardens in three urban centres of metropolitan regions (Ljubljana, London and Milano). We included in to the analysis 211 garden plots – 127 from Ljubljana, 42 from London and 42 from Milano. In the case of London we also included data gathered via current project called Harvest-o-meter.

RESULTS

Gardening has also different economic impacts which are related to gardeners' behaviour. Managing the economics of the gardening (private gardens, allotment gardens, etc.) in an aspect which gains on importance especially under rising food prices and unemployment rate. In regard to private gardens, city authorities are regulating publicly owned gardens from environmental and economic point of view. This leads to uneven conditions which are usually connected with higher production costs.

For the purpose of this research gardeners were asked to estimate their yearly production costs (seeds, seedling plants, fertilisers, plant protection etc.). With multiplying yield of the most common harvested crops/vegetables and average retail price of vegetable we estimated the revenue. With deducting the production cost from revenue we estimated average gross margin for the gardening production per m2 in the Ljubljana, London, Milano Metropolitan regions. With this analysis we were able to estimate the economic impact of urban gardening on the vegetable supply chain. Results show that the highest revenue (EUR/m2) was reached in London, followed by Ljubljana and Milano. The lowest cost (EUR/m2) were reported by Ljubljana followed by London and Milano. The highest gross margin (EUR/m2) or savings were reached in London followed by Ljubljana and Milano.

If we multiply Gross Margin with area of urban gardening in the case study metropolitan city we can estimate influence of urban gardening on food supply chain. Total average annual Gross Margin for Ljubljana (158 ha), London (861 ha) and Milano (201 ha) is 3,823,600 EUR/year, 24,882,900 EUR/year and 723,312 EUR/year, respectively. With other words this is the total amount of the money that all gardeners in the city save as a result of their own food (vegetable, fruits) production.

CONCLUSIONS

Results from the economic analysis show that home gardening can play an important role for the provisioning of vegetables and fruit in urban areas, especially for those products with a shorter shelf-life, such as soft berry fruits, but also many vegetables and herbs. Although profit is not the main motivation for most urban gardeners, the models show that productivity can be high in urban systems and that gardeners can earn above the minimum wage especially when using organic inputs and outputs i.e. organic food prices in the calculation.

We conclude that in the Global North, urban gardening can be made into a serious part-time profession, which can be combined with other part-time jobs and/or used as step towards obtaining a full-time gardening career. In addition to the production economics, food eating and buying patterns, which are considered in this paper, there are also further documented socio-economic benefits from urban gardening, such as improvements in health and wellbeing, community life, skills and environmental sustainability, these may be assessed by e.g. the social return on investment method, however they are not presented in this paper.

Interviews from each Metropolitan area showed that urban gardening is very alive and forms vigorous and vibrant communities which are not only self-sufficient and closed but they interact with others especially in sharing knowledge in growing plants, new gardening technics, exchanging seed and seedling plants and final products (vegetables, fruits, jams, compotes, etc).

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Urban Agriculture in Bangladesh: Current Scenario and Policy Options

Shahrina Akhtar[1] and Md. Abiar Rahman[2]

Abstract **– The leading development challenges of Bangladesh today include reduction of poverty and environmental management in the context of rapidly growing population, which means that the number of low-income consumer is increasing. Feed the increasing population is a big challenge. Urban agriculture (UA) can contribute to food security by increasing the supply of quality food. The demands of city agricultural products can be met through urban and semi-urban agricultural practices. These demands in fact led to development of small-scale urban vegetable, floriculture and horticulture gardening, poultry, fisheries and livestock production. In the near future, it will be accepted and implemented as a major intervention in food security and social security programs. There is a trend in developing UA in some cities to maintain and improve the livelihood of the poor people and help the city dwellers with supply of much needed food products. However, there are still many challenges and constrains in developing UA in Bangladesh. The only need is to organize and develop the urban and semi-urban agriculture in the city in a more planned way. Urban agricultural policy can be an integral part of a set of policies for sustainable urban environmental management.**

Keywords **– Urban agriculture, Food quality, Policy.**

INTRODUCTION

Increasing population is one of the big challenges of Bangladesh that includes reduction of poverty and environmental management. Development of urban area has been occurring since couple of decades in Bangladesh without any plan and strategy. Population influx to urban area is very high as people are pushed to the cities because of limited job opportunities in rural areas. With rapid and unplanned urbanization, incidence of urban poverty and food insecurity has been also increasing alarmingly in Dhaka (Choguill, 1995). Due to climate change and other natural and anthropogenic activities, many people are moving to urban area. About 50% people will live in urban area of Bangladesh by 2050 (Anonymous, 2015). Agricultural lands have given way to housing, roads and other infrastructures. Most of the urban poor are concentrated in informal settlements, where there is no infrastructure or services to address environmental problems. Urban agriculture (UA) contributes to food security by increasing the supply of food and by enhancing the quality of perishable foods reaching urban consumers. Rooftop gardening can be an effective method in ensuring food supply and satisfying nutritional needs of the inhabitants (Anonymous, 1985). Although UA has been in the city for many years and it has contributed to additional income of the households, it is still no more than a "sideline subsistence activity". For the poor of the city, the potential of UA yet to be exploited as a strategy of poverty alleviation (Remenyi, 2000). Proper understanding of the problems and prospects associated with the adoption of policies will contribute, to a great extent, to increased food supply in the city. Islam (2004) identified the long-term policy measures for rooftop gardening that can become the basis for a sustainable approach for UA. The exploration of local socio-economic and institutional conditions that might promote and hinder UA is needed to implement policies that effectively integrate agriculture into the urban environment. These demands in fact led to development of small-scale urban vegetable, floriculture and horticulture gardening, poultry, fisheries and livestock production. The aim of this paper is to know the current scenario of UA and possible strategies for its development.

CURRENT SITUATION OF URBAN AREA

Houesehold income and expenditure survey showed that family size, monthly income, monthly expenditure, expenditure for food and beverage and food intake are increaed over time. Urban people use to expenditure about half of their income for food and beverage (HIES, 2010). Nowadays, although urbal people intake substantial amount of food compared to rural people, but the quality of food is a big concern.

Table 1. Family size, income, expenditure, food expenditure and food intake in urban area of Bangladesh.

Year	Family size	Income (USD)	Expenditure (USD)	Food expenditure (%)	Food intake (kcal)
2010	4.41	211.1	199.1	48.19	2344.6
2005	4.72	134.1	109.4	45.17	2253.2
2000	5.13	126.6	94.1	44.55	2263.1

Source: HIES, 2010

NEED OF URBAN AGRICULTURE (UA)

Climate change is hampering crop production in Bangladesh. With rapid and unplanned urbanization, incidence of urban poverty and food insecurity has been also increasing alarmingly. UA tends to be synonymous with opportunistic planting of trees or seasonal plants that use little or no land such as vines and hanging cucurbits grown from roof gardens or hanging pots, various branches of high valued horticulture, including vegetables, flowers, herbs, and potted shrubs, economically useful tree varieties that provide fruit, nuts, flowers, borders and shade. Rooftop gardening (RTG) can be an effective method in ensuring food supply and satisfying nutritional needs of the inhabitants (Islam, 2004; Rob et al., 2015). A large amount of agrochemicals are used in food production and preservation. In 2008, 7438

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people died from pesticide-related poisoning. Urban people are at more vulnerable condition. UA can ensure food security, quality food, income generation, self-satisfaction, environmental conservation, employment opportunity, develop marketing.

PROSPECTS OF ROOFTOP GARDENING (RTG)

Most of the rooftops of Dhaka are flat and easily accessible which are suitable for gardening. Large number of government and commercial office building roofs that are not currently under any use, can be used for RTG. The immigrants in Dhaka are resource for their innovation and adaptation, who have firsthand experience in agriculture. Urban climate in Bangladesh is suitable for RTG and it does not need too much irrigation for growing plants. There already exists network of pipelines for water supply to the rooftop for almost every buildings. There is an extensive NGO net working within the country from where a range of assistance is available for initiating new projects for RTG. The gardeners can easily buy their materials from the nearby adjacent markets of the city. The existence of huge number of nurseries in the city will ensure the supply of plants in time. If proper technological and technical supports are provided, most of the residents would practice RTG.

CONSTRAINTS OF ROOFTOP GARDENING (RTG)

Although there are many opportunities of RTG in urban Bangladesh, there are also some constraints which should be addressed before planning. Some constraints are community concern, while some are personal. Islam (2004) identified some constrains of RTG for Bangladesh. The lack of finance is one of the critical factors that constraints RTG. Burglary is a big concern. Good quality of seeds/seedlings are not available. A large portion of the urban people have no knowledge on agriculture and planning. There is no authority to take care of gardens in the commercial and public office buildings especially at night. There are several constraints due to the present conditions of buildings. For example, some buildings are old, especially in the old part of the city. Also some new buildings are not suitable for RTG. Shade of tall buildings may hamper the production of short buildings. Although almost all rooftops have water supply, there is a shortage of water particularly during the dry season. The limited access of urban poor to high valued land in Dhaka is the most important constraint preventing the poor to involve and exploit their skills as urban farmers.

STRATEGIES

Strong political commitment and solid policy guidelines are the preconditions for creating supportive environment for RTG. Building regulations and laws should be amended and planning of RTG should be considered. To prevent burglary, fencing and security system can be installed. Community activities have to begin, particularly with groups of women farmers. Woman can manage RTG for income generation. Land use regulations for both public and private land are needed for urban food production. Information on production technology and management including fertilizers, water and pesticides, could greatly increase crop production. Information technology can be used to provide information. Donor agencies and NGOs effort in promoting RTG will create an environment that will help the public organizations for making strategies. Research and development activities should be enhanced with foreign funding and expertize. Coordination among different agencies and stockholders are needed with proper policy strategy. The city authority should be empowered first, administratively, personally. Moreover financial support may help to develop and administer a policy for the whole built up area. Participation of urban administration, local community and other stockholders should be ensured.

CONCLUSIONS

Increasing population creating numerous problems in urban society. Climate change and other anthropogenic activities are hampering crop production. Food quality is a big concern now. Even some urban people have money, but they cannot get quality food due to poor production and postharvest monitoring. People can produce their own food to some extend on RTG using available resources and planning. GOs and NGOs can work together with different stockholders to overcome the challenges. A good strategy and policy can strengthen the program.

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There is no urban food policy. Frames of food in Swiss policies

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Abstract – This paper aims to better understand the different frames of food that are present in the various institutions relevant to urban food (policy) in Switzerland, using the case study of the city of Basel. Five political/strategic documents from the city level and seven from the federal level are analysed to identify the discursive frames of food in policies of agriculture, health, environment, planning, and others.

The results show that food is not a major topic in most of the potentially relevant policy documents; there are not many cross-references between the different policy documents; the policy fields remain focused on their core interest. The dominant frame of food is an economic one, with the addition of an environmental frame. Food is nowhere framed as a policy connected to cities or municipal policies. Thus, we can conclude that there is currently no real urban food policy in Switzerland.

Keywords – urban food policy, frame analysis, Switzerland.

INTRODUCTION

The topic of urban food is a hybrid one. There is noclear policy to address it, not the one legislation to regulate or only one administrative body to feel responsible for it. Urban food strategies and food policy councils have often been cited as spaces in which this hybrid nature is addressed and different views of food can be integrated through creating communicative spaces, involving the full range of stakeholders with their various views on food. The way food is framed is relevant for future city planning (Morgan 2014).

Scholars agree that urban food policy needs an integrated approach, spanning across different disciplines, and involving science, policy and civil society at the same time (Wiskerke and Viljoen 2012; Sonnino 2009). Yet, urban policies are often still happening in 'silos'; the different city departments focus on their core field of expertise, such as environment, health, or planning, without considering potential synergies with others. The challenge of an 'integrative' approach lies in the fact that people have been trained in their particular field of expertise, and that those different fields follow their own logic and use their own specific ways of framing societal problems. Understanding the different frames of food might contribute to laying out the potential for developing an integrative strategy. This paper aims at identifying the different frames of food that are present in the various institutions relevant to urban food (policy) in Switzerland.

METHODS

A case study approach was applied, using the example of the city of Basel, Switzerland. Five political/strategic documents from the city level (coinciding with the cantonal level in this case) and seven from the federal level were analysed to identify the discursive frames of food in policies of agriculture, health, environment, planning, and others. The documents were searched for their mentioning of the term ‚food', including different translations of this term into German, which all include slightly different connotations. In addition, in particular the agricultural policy documents were searched for the term 'urban/city'. The results are discussed in the following.

RESULTS

At the federal level, out of the seven documents analysed, six mention food to a relevant extent.

In the federal guiding document on spatial planning (Raumkonzept Schweiz; Schweizerischer Bundesrat et al., 2012) food is exclusively mentioned in connection with food production to safeguard a sufficient basis to feed the population of Switzerland. This task is fully assigned to rural areas. Urban areas are framed as "productive and dynamic places of economic development, innovation and culture" whereas rural areas are the places of "food producti on, landscape preservation, and energy production".

In the Sustainable Development Strategy (Schweizerischer Bundesrat 2012b), food is explicitly mentioned in three out of ten measures. This happens almost exclusively in the context of nutrition and food security (mainly in developing countries). Furthermore, food is connected here to the entrepreneurial approach of the Swiss 'quality strategy' (including environmental aspects), as well as to promotion of public health.

The Swiss ‚Food and nutrition report' (Keller et al. 2012) claims in several places that public health politics need a multi-sectoral approach, including agricultural policy. For the authors of that report, this is the basis for fully using the potential for a balanced diet. Agricultural policy is mentioned as having an important function for food provisioning and prices of food. The report hereby links to the new agricultural policy that was developed at that time.

In this Agricultural Policy 2014-17 (Schweizerischer Bundesrat 2012a), the agriculture and food industry is predominantly connected to economic efficiency, entrepreneurship, high quality production, and food safety. Several policy fields are listed that are said to have an influence on agriculture, such as spatial planning and environment; interestingly, 'health' is missing in this list.

A further document from agricultural policy is the so-called Discussion Paper Agriculture 2025 (Bundesamt für Landwirtschaft 2010). In this document, food is mainly framed as economic activity. The urban space is rarely mentioned. Yet, the document refers to the fact that agriculture is embedded in the whole supply chain and stipulates

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that agricultural policy should better consider this embeddedness.

At the cantonal level, of all documents analysed, only the cantonal plan that directs spatial planning (Kantonaler Richtplan; Regierungsrat des Kantons Basel-Stadt, 2014) mentions food to a considerable extent. In this document, food is mentioned in the context of food production, and then again in terms of food waste management. Processing, distribution or consumption is not mentioned.

Apart from an apparent lack of food in the city's strategic documents, it should be mentioned that the city of Basel currently develops a new sustainability report, in which food will play a role. This has not been integrated in the analysis, as it is work in progress.

DISCUSSION

The results show that food is not a major topic in most of the potentially relevant policy documents; in particular it is hardly mentioned at all in the planning documents of the canton. In addition, there are not many cross-references between the different policy documents; the policy fields remain focused on their core (institutional) interest. Food is largely assigned to agricultural policy, which explains that we find more mentioning of it in documents from the federal level (the level that is responsible for agricultural policy) than at the cantonal level. Accordingly, food is widely mentioned in the context of food production. In particular health policies add a focus on consumption, but processing, transport and distribution are lacking.

Themes mentioned in connection with food include (list not exhaustive) economy, rural areas, land use, environment, international development, health. Compared to food policies in other cities, e.g. Malmö or Bristol, topics such as climate change; energy consumption; spatial planning; social integration; cultural development; quality of life are largely missing (Bristol Food Policy Council, 2015; City of Malmö, 2010).

CONCLUSION

Overall, the dominant frame of food is one of economy and efficiency, with the addition of an environmental frame. A socio-cultural framing of food could not be found. There is a clear distinction between the rural and the urban, between food production and consumption; links between policy fields (e.g. health and agricultural policy) are rarely made. Furthermore, food is nowhere framed as a policy field connected to cities or municipal policies. Thus, we can conclude that, currently, there is no articulate urban food policy in Switzerland. The potential of food as a vehicle to integrate various policy fields and societal challenges is not reflected in Swiss policies.

ACKNOWLEDGEMENT

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Feeding spatial planning. Rethinking agriculture as an integral part of the (policies of) city/region

Maria Felicia Della Valle, Fulvio Adobati[1]

***Abstract* – The focus of the paper is the link between urban food strategies and policies at regional/national level. Related to the UFS, it means consider their integrative governance structure as the way that can ensures a balance between top-down and bottom-up elements. Comparing some European food strategies the aim is valuate how an holistic approach and an integrative governance can increase the sustainability of the local food system in a regional food system through spatial planning. One of the main instruments that city administrations have to support urban agriculture and changes of food system is the territorial/spatial planning/zoning. Cities can facilitate local food production by designating land for urban and peri-urban agriculture and gardening. Spatial planning can support short food supply chains and diversity of food retail by planning for areas for independent food retailers or farmers' markets. Particularly important in this process is the connection of local or city strategies to their rural hinterlands, in terms of policy development but also in terms of reconnecting the food system.**

***Keywords* – european food strategies experencies, food community self-supply, spatial planning for urban agriculture**

INTRODUCTION

Two key questions have directed our research:

1. What is the potential and actual role of spatial planning in promoting and facilitating agriculture in the urban hinterland and specially in the Rural Urban Fringe (RUF)?
2. What problems does the planning policy context pose for Urban and Peri-urban Agriculture (UPA), and how can these be overcome?

Many European and North American cities and regions have recently developed food strategies. They deal with a similar range of themes (health and wellbeing, environment sustainability, economy and community development, social and cultural aspects, food security/social justice, etc.) although they might have different drivers and different priorities depending on their local context. RUF now represents the dominant space of this local context, requiring explicit policy interventions that manage it as a place with its own needs and priorities. The zone where a city or town meets the countryside is ubiquitous, dynamic and highly diverse (Low-Choy et al., 2008). Even if farmers have traditionally been the 'custodian of the land' in rural and urban fringe areas, the agricultural spaces of the RUF appear clearly problematic for planning system; a system that has not still evolved to reflect the modern need of commercial agriculture and which fails to support the necessary diversification of agricultural activity. The fact is that in the RUF there are numerous conflicts, primarily related to the land use.

Land use issues, specifically availability of land, access to land and usability of land, are of particular concern to urban farmers. These issues are often imposed or perpetuated by the urban planning policy context through a lack of substantial recognition of urban agriculture in planning policy, through a lack of awareness about the socio-economic and environmental role of urban agriculture in cities and their surrounding areas, through resistant attitudes or cultural norms held by players in the land use planning process, and through a lack of resources, technical and financial support for urban farmers from the government.

If we also consider that both the spatial planning and ecological approach paradigms have evolved separately, this has shaped distinctive policy responses and institutional architectures which have exposed a significant urban/built versus rural/natural environment divide (Scott, 2012). This is at its most marked and pernicious in the RUF where both frame works coincide in daily practice and decision making (Scott & Carter, 2012). The RUF can become the scene of tension between issues of development and conservation, of a need to preserve a legible heritage landscape while adapting positively to necessary change. This, in turn, hinders the delivery of effective planning, as plans and strategies are being developed in isolation from each other, creating scalar and sectorial disconnects and neglecting the interrelationships affecting the wider land use system where the RUF is a core component.

Despite to this recent planning researches and European projects on the urban fringe and food growing (PURPLE 2012, SURF 2012, SUBURBFOOD 2013) had identified the high level of interdependency of urban and rural interests, with the respective functions of fringe and inner urban areas effectively merging. This perspective represents a challenge to the convention of treating the urban and the rural as independent or opposite entities when the interests of their habitants are essentially converging in most of European Regions. Recent initiatives of edible productive landscape and food growing indicate that the concept of urban agriculture may have strong currency and resilience in the RUF, even serving as an exemplar for integrated development (Piorr et al.,2011). According with this, we consider the RUF as a positive opportunity landscape to re-connect the theory and practice of spatial planning linked to the role of urban and peri-urban agriculture, challenging conventional land use theories and models.

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STUDY CASES AND METHODOLOGY

In order to reflect on how effectively the planning system supports and encourages urban and periurban agriculture integrating them in a sustainable spatial planning strategy, we have analysed three UFS (Brighton &Hove, London and Pisa). They have a specific policy and planning focus on urban-rural linkages connecting city and their hinterland through food, enhancing regional agricultural identity and creating spatial quality. Our research has found that the planning system appear effective in protecting open land through green belt or parks network system, but we have notice that existing planning regulations, as well as regional and local planning policies, often either restrict or ignore urban agriculture as a land use. By this analysis we have deduced a general lesson on the role that spatial planning can play in favour of agriculture in the RUF.

The challenge for the statutory planning framework is to recognise and integrate food production into sustainable development strategies.

The planning system needs to better encourage diversification that makes agriculture more viable. Urban fringes must be supported as contributors to the well-being of regional and sub-regional territories. Planners and the planning policy context can impose and perpetuate the identified land constraints in three main ways:

- through the institution of planning, both the institutional structure (that is, the organization of and relationships between people who plan at local and regional levels of government) and the institutional capacity (resources and will) to effect changes;
- through the policy framework that is, the products of planning: legislation, planning policy and by-laws;
- through cultural norms and attitudes of the key players in the planning process: planners, decision makers, and the public.

Related to Zoning for UPA three are roles that cities can play to promote them:

- Including UPA in the planning process as a component of land-use and food policy
- Contributing to the general process of rehabilitation of dismissed or abandoned areas
- Creating urban and peri-urban agriculture zoning and permitting processes.

CONCLUSIONS

In this perspective, we conclude suggesting some tools that can support planning policy system:

- Promote the multifunctionality in the planning process of peri-urban zones, as the basic concept which supports the sustainable development of numerous interactions in these zones. How?

The contribution of local/regional planning practices in this area would be in the planning commitments that provide flexible instruments favouring multifunctional agricultural use of agriculture and conservation of the attractive and functional rural landscape in a ring around the city, instead of creating rigid spatial planning solutions;

- Empower the network of local bodies involved in agriculture in peri-urban areas, which can gather all municipalities targeted with inter-urban spreading, with the aim of protecting and successfully exploiting agricultural, forested and natural peri-urban areas;
- Encourages bottom-up initiatives and further development of strategies and legal framework which will contribute to preserving agriculture, as well as to green spaces which provide beneficial goods for the urban community taking into account their importance for food system.

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Building local food governance: the case of the Food Plan of the Pisa province

Adanella Rossi, Laura Fastelli, Silvia Innocenti[1]

***Abstract* – In the context of acknowledged need for a transition to more sustainable food systems, the definition and implementation of a new food governance system, aimed at facing the complexity of the change needed and assuring the expression of all the interests and potentials, appear crucial.**

Within a multilevel perspective of food governance, the local urban-rural systems appear particularly promising. This paper analyses an experience in Italy in which since 2010 public and private actors have been interacting to design and implement an integrated urban food strategy. While exploring the dynamics underlying the definition and the functioning of its various institutional tools, the paper critically analyses the challenges and the weaknesses emerged. The problems related to the active involvement of the various public and private stakeholders and to the implementation of an institutional environment enabling the exercise of food democracy are amongst the main issues analysed.

***Keywords* – food governance, urban food strategy, food democracy**

INTRODUCTION

The acknowledged need for a transition to more sustainable food systems has unfolded the importance of more integrated and advanced forms of management of food-related issues.

The increasing number of actors interested in a different organization of the food system and the multiple areas that compose this "new geography of food" (Wiskerke, 2009), but also, on the other hand, the complexity of the processes underlying a significant change in the way to handle food-related questions, have brought to the fore the issue of governance. In this sense, it is increasingly recognised the need to create an effective food governance, by properly defining its composition and its spaces, the modes of interaction between the actors/fields involved and the operational and decision-making mechanisms underlying its effectiveness. The model is therefore that of a multi-stakeholder and multi-agency governance, aimed at creating the conditions to ensure a real expression of all the interests and an effective mobilization of the different resources.

Within a multilevel perspective of governance (Bache and Flinders, 2004), the local scale is acknowledged as a particularly promising level, because of its greater possibility to experience innovative solutions. More specifically, the urban contexts are of particular importance. They have traditionally played a key role in driving the economic, political and cultural tendencies around food, and even more today they have a growing weight to introduce innovation in the governance of food. The urban food strategies developed in a number of Western countries are an expression of this potential. These processes are however not free of difficulty.

This paper presents and discusses the specific initiative that has been developed in the area of Pisa province (Tuscany, Italy), a context rich in experiences and experimentations around food practices. Over a five years period, the project worked on raising awareness of the opportunity to define an integrated food strategy to handle food-related issues and, then, on creating an appropriate institutional framework through which to realize a new system of governance. While exploring the dynamics underlying the design and implementation of the various tools, the paper aims at critically analyses the challenges and the weaknesses emerged.

THE METHODOLOGICAL APPROACH

The process has been promoted through a partnership between the Provincial Administration and the University of Pisa. According to an approach of participatory action-research (Kindon et al., 2007), the research team has played a significant role in facilitating the various phases of the pathway. It handled the organisation, during 2010, of the early public events aimed at stimulating a public debate on the issue. Afterwards, it animated the various thematic meetings organised with the different typologies of public and private actors involved. It also coordinated the design and the operation of a web platform, as a virtual place of interaction. Based on the results of the events and meetings and in cooperation with the Provincial Administration, it then supported the definition of the institutional framework needed to actualize the Food Plan and submitted it for validation to the involved actors. In the last phase of the project, it took part in its new articulation at suburban level.

All these activities has allowed the researchers to follow the development of the initiative directly, observing attitudes and behaviours of the various actors, and assessing the effectiveness of the actions carried out.

THE RESULTS OF THE ACTION-RESEARCH

The actions of awareness raising and knowledge alignment around the opportunity to develop an integrated strategy for food permitted to unfold the existing fields of actions, the available competencies, but also the diverse perspectives and expectations.

The participatory process supported the construction of the coherent system of principles, goals, rules and institutional infrastructures needed for the development of the Food Plan. This phase led to the design of: the Food Charter and the Food Strategy – two political documents, dealing, respectively, with principles and goals; the Food Programme Agreement

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and the Food Alliance, two institutional tools of co-decision and interaction amongst, respectively, public and private actors.

At the end of 2014 the pathway towards the Food Plan was still ongoing and appeared not without difficulties. Twenty-three Municipalities out of thirty-nine signed the Charter. The process of coordination at provincial level of the actions of local governments as envisaged through the Programme Agreement has scaled down. Among the reasons there have been the weakening of the leadership role of the Provincial Administration, as a consequence of the institutional reorganization ongoing in Italy, but also the presence of a parallel similar process promoted by a supra-municipal organization operating on a large portion of the province. With regard to the civil society participation, the large territorial scale of the Alliance proved inappropriate operationally. In fact, after a period of not very fruitful efforts to involve the diverse typologies of actors, more recently there has been the spontaneous formation of a new space of interaction among members of civil society in a more restricted area, within the city of Pisa. Through the support of the action-research team, since the beginning of 2014 this space started to take the shape of a Food Council, actively intervening on many issues and cooperating with other local organizations.

DISCUSSION OF THE PATHWAY

The pathway towards an integrated food strategy have not so far given the expected results in the territory of Pisa. The ambitious project to handle foodrelated issues on a large area, coordinating numerous small administrative jurisdictions and looking at the rural-urban relationships on a broader scale, has found many weaknesses, especially on the governance side. The design of the pathway has not invested on the experiences and competencies of the single Municipalities. It has moreover underestimated the resistances or real difficulties of Municipalities in changing approaches and procedures to adopt a systemic vision; even before, their different perception of the problem, in relation to the different characteristics of the governed areas; not last, the political complexity of a federated government based on a top-down defined project. The loss of authority by the Provincial Administration has brought out these aspects. At the same time, the assumption of the leadership of the process by the supra-municipal organization could represent an opportunity in that regard. In addition to this, the problematic involvement of the civil society organizations in the first phase, and the different course that the process has assumed through the Food Council highlight the importance of other points, within the more general participatory approach: creating effective spaces and tools, to foster interaction, expression of views and interests, emergence of resources, definition of shared goals and co-design of collective initiatives; connecting actions to specific, concrete objectives; networking, to create consistent and mutually reinforcing actions.

SOME CONCLUSIONS FROM A WORK IN PROGRESS

The construction of local food policies and integrated food strategies goes through the building of effective governance systems able to mobilize all the resources available in a coherent way. The development of these processes cannot however be taken for granted. The experience of Pisa shows the complexity of multi-actors processes aimed at radically innovating established visions and practices in order to tackle the multidimensionality of food issues through a systemic approach. Such a reorganization involves the co-creation of new knowledge systems and normative patterns, the fine-tuning of new institutional and technical tools, the definition of new social contracts and market relationships, etc. The necessary processes of interaction take time, appropriate methods and a strong support of facilitation to foster the real involvement of all the stakeholders and to overcome gaps and conflicts. This is particularly evident for public bodies, even more in the case of fragmentation of administrative jurisdiction; the implications related to subsidiarity are here really challenging and require appropriate methodologies. As said above, also the growing agency by civil society requires innovative efforts to integrate and enhance different trajectories. The recent reorganization of the pathway, moreover, highlights the importance of a continuous monitoring on usefulness and effectiveness of tools and actions. A high level of "institutional reflexivity" (Wolfe and Gertier, 2002), through an interaction open to the necessary adjustments, is crucial to achieve effective forms of collaborative governance.

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WG11 - Urban agriculture II. Grass-root initiatives and community gardens

Over the past 200 years processes of industrialisation and urbanisation disconnected agricultural production from the locus of consumption, resulting in the dominant role of global food supply chains to feed the city. Over the past decade, urban agriculture (UA) has been a policy item in developing countries and provides the opportunity to integrate multiple functions in urban and peri-urban areas. In Europe, cities start to reconnect to their proximate support areas of food production and fresh water sources in combination with a role of urban and peri-urban landscape and nature for the quality of life of individuals and societies. In addition, the development of capital-intensive agriculture as part of the development of 'Smart Cities' (combinations of bioreactors, intensive horticulture, and aquaculture in combination with informational systems) in urban fabrics is credited a role in the optimization of resource efficiency with a high visual impact. In the context of the current economic and environmental crisis pragmatic changes however mainly depend on grassroots initiatives and community gardens, which include peri-urban forest gardens and agro-recreational landscapes. UA and urban and peri-urban agriculture and forestry (UPAF) respond to a more acute crisis in the financial system, and vacant plots of lands and abandoned buildings are seen as potential places for food production and social activity. This increasingly comes to the attention of private real estates and social housing companies. Consequently, UPAF will likely bring with it many changes to how society and policy makers think about the way food is sourced.
This Working group calls for contributions that identify, map and analyse the benefits of this large variety in organizational design, grassroots initiatives and community gardens in particular, and calls participants to share experiences that might not directly aim to but reflect effective and successful approaches for enhancing a sustainable reconnection of agricultural production and the locus of consumption. Contributions should be on urban and/or peri-urban dynamics. We welcome papers that bring evidence for the emergence of multi-functional, 'edible' landscapes in urban and peri-urban areas in the global North and global South, and interpret these dynamics in terms of contributing to sustainable, resilient urban development and/or the construction of strategic food reserves in densely populated areas. Papers can have a focus on food security through local, healthy food provisioning and/or the linkages between multifunctional agriculture and forestry (for example offering amenity, recycling, closing of water and nutrient cycles, potentially wildlife and biodiversity gains), food chains and local food systems for greater social justice and social inclusion. More in particular papers could address one or more of the following questions:

- *Which new initiatives are emerging in the global North and in the global South, and what is their impact?*
- *How do they scale-up? What are critical factors for success and failure?*
- *How can they be connected with and/ or strengthen (urban) food policies?*
- *What will happen to the characteristics of urban and peri-urban green space if cities have a greater sway over policy?*

Convenors:
Lola Domínguez García, Paul Swagemakers, Esther Veen and Talis Tischenkopf

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New urban gardening trends in Prague: community and ecosystem services on stage

Jana Spilková[1]

***Abstract* – Recently a new trend is emerging within the urban fabric of Prague – the founding of new "urban community gardens". The first gardens appeared in Prague in 2012 and others were created during the 2013 to 2015 growing seasons. Mothers with children and yuppies, motivated by freshness or health enjoy the opportunity to grow their own food in a limited allotment, pensioners and older generations want to relive the experience gained in the era when gardening used to be an everyday part of their lives. These urban gardens have important positive impacts on society and local community and are widely publicized. It is also important to find out if the emerging community gardens in Prague also have the potential to truly contribute to sustainable urban development and resilience. That is why the paper refers to ecosystem services and focuses on their provisioning by the emerged community gardens.**

***Keywords* – community gardens; urban agriculture; ecosystem services.**

INTRODUCTION

There is a long tradition of gardening and growing one's own food in Czechia. At the beginning, gardening served mainly for the production of affordable and healthy food, however later it went beyond its productive function (growing one's own food and its sharing with relatives and friends), also contributing to social relations and cohesion. Gardening in Czechia also had a strong recreational and psycho hygienic function, especially in the period when people's freedom and activities were suffering under the totalitarian regime and hobbies such as gardening were among the most important means of self-realization.

We can observe a revival of the interest in gardening and growing one´s own food in the form of community gardens (Metcalf and Widener, 2011; Corrigan, 2011; Armstrong, 2000; Turner, 2011; Pudup, 2008). These gardens create new landscapes of self—sufficiency and social support within the city and have many positive health and social benefits (access to fresh food, often in organic quality, physical activity, feeling of nature within the city, community building and sharing etc.). They may be also perceived as a reaction to suburbanization or disinvestment within the cities (Kurtz, 2001). Besides growing of food, they primarily focus on growing of the community and social relations (Kingsley and Townsend, 2006 etc.).

However, this type of gardens are organised on a different basis than traditional allotment garden colonies were and therefore, these community gardens are the subject of our paper as a new phenomenon to study. This paper first asks the question whether these urban gardens really stand for a new perspective, under different conditions and with different motivations, or they are only looking for new names for the old ways of gardening (allotment garden colonies) that once proved effective and popular. Thus, the aim of this paper also is to answer if the new community gardens can contribute to strategic spatial planning by offering the ecosystem services which can be used for a sustainable development of modern cities.

METHODS AND DATA COLLECTION

The data for this paper were obtained by structured interviews with managers and/or organizers of all the thirteen existing community gardens in Prague (at that time - end of 2014, now there are about 17 community projects). The interviews lasted about 45 minutes in average and focused on the organization of the garden itself and style of gardening, the gardeners involved and the philosophy or motivations behind the garden´s creation. Interviews were recorded, transcribed and then subjected to content analysis.

During subsequent field research, all the gardens were visited again and checked for the existence of particular ecosystem services (each of the ecosystem service in particular had its own basic indicators to be tracked, e.g. the existence and quantity of trees, plants and water surface for air quality regulation etc.). The services provided have been registered into field survey sheets. The field research has been supplemented with photo documentation of all the allotment gardens in question.

RESULTS

According to majority of the interviewed founders of Prague´s community gardens, the idea behind their community garden was not only growing vegetables or fruit for own consumption, but also creating a community where people could meet in the garden, together take part in activities they like. When asked for the difference between the community garden and traditional allotment gardens, the main difference lies in motives. In the allotment gardens, people produce for their own consumption or sharing with their relatives and friends. In small community gardens, it is more about fun, about a challenge to try something that people have retreated from, to manage to grow something. Gardeners often organize many activities in their gardens, which more or less relate to gardening (picnics, barbecues etc.), but they also celebrate a neighbors´ feast etc.

A vast majority of the interviewed gardeners confessed that gardening as a productive activity has been more or less secondary motive for founding the garden. Many of them started the garden without any prior knowledge of cultivation principles or sufficient practice in it.

Among the most often mentioned motives for the creation of a community garden there was the effort to "do something" with the neighborhood environment in

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the sense of maintenance of the garden´s surroundings, and to create a place for meeting the neighbors, for sharing not only the place but also ideas and activities. The garden was thus meant as another means of communication and creation of the quality social relations. It is thus obvious, that the newly emerged community gardens in Prague are much more about "community" than about the "gar-dens".

Nevertheless, if meant to serve a wider audience of urban dwellers, community gardening must become more than just a way to grow food, but also the medium of creating places of engagement and sense of belonging (DeLind 2002). Geographers and plannersin Western Europe and North America often view community gardens as a practical response to sub-urbanization, disinvestment and urban blight (Kurtz, 2001; Pudup, 2008). Community gardens are sometimes constructed as a part of urban greening strategy against the urban environmental degradation. We thus have to ask, what the potential of community gardens in the process of a more sustainable urban development is. In this vein, we monitored ecosystem services, defined as benefits people can derive from ecosystems, in the surveyed gardens (Wilkinson et al., 2013).These can offer provisioning services (food, ornamental flowers), cultural services (aesthetic values, nature education, recreation, inspiration, and social relationships), regulating services (air filtration, erosion regulation, noise reduction, surface water drainage etc.) and also supporting services (habitats for flora and fauna, soil formation, seed dispersal or pollination).

The results of the field survey showed that most of the gardens fulfil the function of ecosystem services (all of the gardens provide more than 50% of the monitored services). Supporting services (soil formation, primary production, photosynthesis etc.) were the most prominent with more than 95% of presence in the monitored gardens. The provisioning services were fulfilled to some 38%, however, the function of food production was present in all the surveyed gardens. Regulating services were offered at the level of 75%, mainly thanks to the regulation of air quality which has been present in all the gardens. Last but not the least, cultural services were very important as well (85%) with the function of "creation of social relations" covered by all the gardens.

CONCLUSION

Cities have to be understood as complex dynamic ecosystems and, as foreign experience shows, gardens foster sense-of-place and experiential learning about local ecosystems (Bendt et al., 2013). Empowerment of ecosystem functions should be also one of the most important incentives for the creation of urban gardens. Although many studies show that the productive and ecological importance of current community gardens becomes far less important and they may be more effective in cultivating "community" rather than food, it is crucial to remind, that even the small gardens as patches of green within the urban land use mosaic, do fulfil important eco-system supporting and regulating functions, besides the obvious cultural ones.

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How the rural is experienced in the city: the recent regulated urban agriculture-movement in Portugal

Isabel Rodrigo[1],Rita Gonçalves[2]

***Abstract* – Urban agriculture (UA) has a long tradition in many countries of the global North, even though it actually encompasses a wide range of country situations, illustrated by the different combinations of degree in importance, formal engagement and policy-making on UA. The Portuguese case where the concepts of urban and peri-urban agricultureare a quite recent novelty and still absent from land use planning policies is illustrative of such diversity. However, from 2008 onwards a public UA movement supporting the implementation of regulated urban gardens has been expanding, with mostly food security purposes in times of economic crisis.The main purposes of this research,carried out in three Horticultural Parks (HP)promoted by the Lisbon City Hall, are to understandthe main gardeners' motivations, and investigate how far those initiatives are socially and politically valuated by its promoter. We conclude that there is a great diversity of socioeconomic gardeners' profile and gardening motivations, apart from the economic ones, and that the recent public UA movement is not being adequately used either to change leading urban dwellers' views on urban gardens or to promote the latter as a tool to provide safe food provision, environmental education and social and environmental sustainability.**

***Keywords* – regulated urban agriculture, gardener motivations, sustainability, Portugal.**

INTRODUCTION

In Portugal, the urban and peri-urban agriculture (UPA) are not a novelty but, recently, some regu-lated UA initiatives have been emerging. This paper focuses on some of those initiatives in Lisbon. Non-regulatedUPA located on public or private empty plots of vacant land and cultivated mainly by low-income families (CabannesandRaposo, 2013) have emerged along with the expansion of the main cities (Lisbon and Oporto), from the 1950s onwards. Despite the territorial expansion and visibility of those initiatives they did not attract the academic curiosity.However, a quite recent regulated urban gardening movement is emerging, dating back to 2003. In September 2013, 107 regulated allotment gardens, promoted mainly by city and/or parish councils, encompassing around 61 ha and cultivated by 4,079 gardeners were in full-functioning. The social consequences of the current economic crisis are not unfamiliar to this recent "top-down" gardening movement: 80 out of 107 gardens have been implemented from 2010 onwards (Gonçalves, 2014).

In Lisbon, the capital city of Portugal,regulated UA has been promoted by the City Hall through the implementation of the Municipal Horticultural Parks (MHP) project. This project has resulted less as a strategy of public policy for the alleviation of poverty, but as a way to diversify the Municipal Ecological Infrastructure (MEI) and recover part of the city landscape occupied with non-regulated UA. It has started in 2011 and intends to implement 15 allotment gardens until 2017. The first MHP (Quinta da Granja, Campolide and Telheiras) are located in three different Lisbon neighbourhoods, date back to 2011 and 2012,and host80 gardeners who cultivate plots with around 120 m2 each. The reason why they were selected for this research is because their gardeners were the only ones with some experience about gardening on a MHP when the fieldwork started.

METHODOLOGY

To evaluate gardeners' motivations and urban farming potential to contribute to a sustainable city, 49 out of 80 gardeners were inquired. Questionnaires were conducted face-to-face, from June to September 2013, and included several topics.

MUNICIPAL HORTICULTURAL PARKS: THREE CASE-STUDY

Most of the respondents in the three case-study gardens are men (61%), middle aged (69% are over 45 and under 64 years old), with high levels of education (61% have 12 years of formal school or higher education), and are actively employed (57%). They live with two or three people (55%), and 16% of the total gardeners households have someone unemployed. This last percentage reflects the unemployment rate in the country that has been increasing from 2008 onwards, reaching 16.2% in 2013(INE data). Most of the respondents have close links with the rural areas (82% and 57% frequently visit and/or spent their childhood in rural territories, respectively), and the agricultural activity: 31% had already exercisedit before migrating to the city, 37% are sons/daughters of farmers and 31% still have relatives and/or friends who farm a small plot of land.

Agricultural practices used by the gardeners from the three MHP do not differ among each other. Tillage is always done manually, using a hoe or a garden rake, to prepare seed bedding. The soil is always kept free of weeds which are removed by hand and used afterwards for the production of a homemade sort of compost. The majority (92%) of the respondents use the compost they prepare out of the material collected at weeding and food waste to fertilize the soil. Manure collected from local animal breeding facilities is also used for fertilization. Horse, goat, chicken or rabbit manure are the most frequently used and generally free, from military institutions (National Guard)

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breeding horses located in the vicinity, or from relatives or friends raising poultry. Only four respondents said they have used mineral fertilizers for soil amendment.No gardener claims to have used commercial pesticides.

Because gardeners do not use chemical fertilizers or pesticides they label their gardening practices as natural and identify themselves as organic producers. However, and although the city Council provided them with some technical sessions about organic farming when allotments were distributed, gardeners ignored or misunderstood what organic practices really are.In contrast with gardener's self-evaluation about their "good and sustainable agricultural practices", a recent study reveals that urban garden production systems, namely in Quinta da Granja HP, used high application rates of nitrogen and water. Both the use of high doses of nitrogen from organic amendments, which surpass crop requirements, and the excess of irrigation has important negative impacts on environment and human health (Cameiraet al., 2014).

BENEFITS FROM GARDENS AND THE MOTIVATIONS OF GARDENERS

In this analysis, urban gardening has proven to be an activity with multiple social, health and economic benefits. Most gardeners see socialization with other gardeners as a factor which has contributed to improve the quality of their lives. Gardening is also a moment to share technical advice, to exchange seeds, and to disseminate less frequent vegetable species which are not usually included in the traditional Portuguese diet, for example zucchini, eggplant or sweet potato, among others: 43% of the respondents claim to have cultivated or eaten one or more of those vegetables for the first time. Gardening has also allowed the gardeners and their families to have a healthier diet: 67% of the respondents eat more quantity of vegetables and more often.

All the vegetables grown in the HP serve for domestic consumption (c. 100%). Whenever there is surplus and the vegetables production is not totally consumed by the gardener household, it is offered to relatives(53%) or friends (14%). Although saving money is not a driving motivation for gardening, the vegetables grown for domestic consumption have a positive impact in reducing household vegetables purchase: 45% of the respondents estimate savings between 50% and 75% of the total amount of money spent to buy vegetables, and 41% value these savings between 25% and 50%.

Finally, gardening has other kind of benefits. It promotes social inclusion within society of the elderly and poorest, in particular, who by gardening can openly show that they have specific skills and knowledge, which are useful both for themselves and society. The positive contributions of gardening to society and the city are issues quite well perceived by gardeners: 47% consider that UA contributes to the beautification of the city; 41% are proud of providing and disseminating agricultural activity among children and city dwellers, and ¼ nurture the reconnections between the rural and the urban, or bring city dwellers close to nature.Gardening is also a way to foster interaction between social groups and, in some cases, to promote a mix of generations.

The gardeners' motivations for cultivating are as follows: pleasure or passion for agriculture and working with the land (71%), to grow their own food and to be sure about the good quality of the consumed vegetables (55%), to practice organic farming, as they perceive it (33%), as a leisure activity (31%), to recall the rural lifestyle (25%), to have physical contact with nature (25%), to socialize/make friends or to make physical activity (23%), to save money (20%).Only very few identified gardening with a way to develop creativity in decorating the plot (12%) and fewer mentioned motivations related with promoting biodiversity (8%).

CONCLUSIONS

Gardeners from the recent MHP promoted by the Lisbon city Council are predominantly men over 45 years old, with a great percentage of retired individuals. UA is more related topassion for agriculture along with the compensationto grow one's own food than to unemployment. Concerning the agricultural practices, the empirical evidence shows the need for more technical advice and supervision from the city Council. These requirements are even more relevant considering the MHP have resulted as a strategy to reinforce the MEI, e.g., to foster biodiversity. Instead of this unmoved attitude, the city Council should play an active role by using UA to reveal among urban dwellers the benefits of urban gardening to the city.

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There is not such a thing as "an" urban garden: motivations and politics of gardening in Barcelona

L. Calvet-Mir, H. March[1]

Abstract **– In the light of socio-environmental challenges caused by climate change and the socio-economic impacts of the economic crisis, a variety of new initiatives have been launched, aiming at rethinking models of production and consumption at the urban scale. This research is focused on the social and public initiatives that concentrate on the creation of urban gardens in the city of Barcelona with the aim to characterize and describe them, assess the motivations for gardening in the different initiatives, and bring out the tensions between initiatives. We conducted fieldwork from March to June 2014 through a combination of qualitative methods, including the collection of background information, semi-structured interviews, field diary, and participant observation (e.g. participation to garden events and assemblies). We characterized and described the different urban gardens initiatives emerging out of innovative institutional and non-institutional local proposals: 1) Network of municipal gardens; 2) Network of communitarian gardens and 3) Empty Urban Plots Plan. Motivations for gardening differ between the three, from motivations targeted at food production and leisure to clearly politicized ones. We also showed some tensions between urban garden initiatives mainly related to the political ideal of city that gardeners would like to achieve and the different views around the relation with institutions such as the local government. Finally, we assess their potentialities and limits to contribute to the achievement of more inclusive and sustainable cities.**

Keywords **– Allotment; Community garden; Political ecology; Sustainable city; Urban landscape.**

INTRODUCTION

Europe has had a clear institutional recognition of urban gardening, primarily through legislation, and also by promoting vegetable growing within the city at specific historical moments (Morán, 2009). On the contrary, urban gardens in Spain have been traditionally considered precarious and informal activities at the periphery of the cities to be eradicated. However, while urban gardens were considered a marginal activity in Spanish cities until mid-90s, more recently there has been a boom of urban gardens in some Spanish cities (Morán, 2010), being Barcelona one of the most prolific examples of this resurgence. This research focuses on the social and public initia-tives that concentrate on the creation of urban gardens in the city of Barcelona with the aim to characterize and describe them, assess the motivations for gardening in the different initiatives, and bring out the tensions between initiatives.

METHODS

We conducted the research in two phases. First, in order to characterize and describe the existing urban garden initiatives we conducted a review of grey literature on urban gardening in the city of Barcelona including policy papers and secondary sources as newspapers' articles. We also conducted semi-structured interviews with persons in charge of the three initiatives. Second, in order to assess the motivations and tensions between the three different initiatives characterized in the first part of the study we selected one urban garden pertaining to each category (Table 1). Methods used included a combination of qualitative methods, comprising participant observation (e.g. participation to garden events and assemblies), informal conversations with gardeners and a field diary from March to June 2014. We coded all data gathered by using no predefined codes (Newing, 2011).

Table 1. Urban gardens surveyed and its characteristics

Name	Typology	Land property	Physical structure	Institutionalization	Assamlearian decisions
Masia Can Cadena	Municipal	Public	Allotment	Yes	No
Poble-nou II	Communitarian	Squatted	Allotment	No	Yes
ConnectHort	Empty Plots Plan	Public	Collective	Yes	Yes

RESULTS

Typologies of urban gardens in Barcelona

Three different initiatives emerging out of innovative institutional and non-institutional local proposals articulate most of the urban gardens in the city of Barcelona[2]:

1) Network of municipal gardens (Xarxa d'horts municipals): initiative of the town council of Barcelona officially launched in 1997 (although it can be traced back to 1986) to develop organic urban gardens for people over 65 years. In total as of 2015 there are 14 gardens included in this initiative in the city of Barcelona.

2) Network of communitarian gardens (Xarxa d'horts comunitaris): this network includes most of the "informal" gardens established through bottom-up process by different social movements and

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[2] We do not include in our analysis backyard and school gardens due to the particular characteristics of these spaces

associations of the city. Most of the gardens of this network were originally established through squatting processes (although some of them have reach agreements with the owners of the land). The structure of the network is quite loose and the number of gardens included fluctuates temporally (as new gardens are included and some of them cease to exist because of legal problems). Its aim is to be a space of interchange of ideas, resources (including seeds) and knowledge among the gardens while also providing assistance to open up new space. In total as of 2015 there were around 20 gardens included in this initiative in the city of Barcelona.

3) Gardens in the context of the Pla buits (Empty Urban Plots Plan): in the light of the effects of the economic crisis, which had impacted upon the construction of planned public urban equipment, leaving empty plots, the town council of Barcelona decided to create an scheme to temporally lease (for free) to not-for-profit public and private associations to develop activities with returns to citizens. This Plan was launched at 2013, and associations that presented project where gardening was the structuring activity won most of the bids. Out of the 14 selected projects, nine are urban gardens.

Motivations and politics of urban gardening

The in-depth study of one urban garden of each of the aforementioned initiatives has revealed diverging motivations for gardening, ranging from food production and leisure to clearly politicized ones. Secondly, motivations concern different scales, ranging from the personal to the global scale. Finally we can see that motivations differ depending on the type of urban garden analyzed (Table 2).

Table 2. Main motivation behind urban gardening in the three selected case of Barcelona. Note: N.A. refers to 'not applicable'

	Personal	Garden community	Neighborhood	City	Regional, national, global
Masia Can Cadena	-Food production. -Entertainment & leisure. -Nature & spiritual experiences.	-Social cohesion & integration.	N.A.	N.A.	N.A.
Poblenou II	-Self-production of organic food. -Entertainment & leisure. -Nature & spiritual experiences	-Social cohesion & integration. -Social & collective empowerment.	-Promote an urban model socially and environmentally balanced. -Place-making.	-Resistance towards neoliberal urbanism. -Opening up of non-commodified, inclusive spaces.	-Anti-capitalist struggle. -Food sovereignty.
ConnectHort	-Entertainment & leisure. -Nature & spiritual experiences.	N.A.	-Social cohesion & integration. -Social &collective empowerment. -Place-making.	-Social performance of empty plots.	N.A.

We also showed some tensions between urban garden initiatives mainly related to the political ideal of city that gardeners would like to achieve and the different views around the relation with institutions such as the local government. For example, while communitarian gardens aim to open up non-commodified and non-neoliberal urban spaces, empty plots gardens are aliened with neo-liberal rhetoric of entrepreneurship and smart-city.

DISCUSSION

Fromour research we can sustain that there are different typologies of urban gardens and that reasons behind urban gardening do not follow a simple and unique logic. We argue the typology of garden is the expression of different motivations that are not isolated from wider societal trends (Calvet-Mir et al. forthcoming). The economic crisisin Europe, with direct effects in southern European countries, has opened up new motivations to engage in urban agriculture activities. Eventually, the increasing concerns for urban sustainability and greener and more inclusive cities also colour the reasons to be involved in urban gardening. We argue that both academic research and policy making need to take into account the different meanings that urban garden represent avoiding monolithic readings and taking into account the diversity of initiatives. This diversity, nevertheless, might also be contradictory or lead to situations difficult to resolve specially when diverse urban gardens initiatives propose radically different city models.

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Agroecology in the city: urban gardens for an agroecological transition

L. Calvet-Mir, M. Di Masso[1]

***Abstract* - Agroecology is a scientific and social practice critical of modern agriculture and its impacts. It is a multi-dimensional framework articulated in three perspectives and scales: productive, social, and political. In the urban context agroecology is seen as an approach to reach more sustainable food provision relationships in the cities. We analyze self-governed urban garden initiatives in the city of Barcelona in order to assess to what extent each of the three agroecological dimensions is being developed. We conducted fieldwork during 2013 through a combination of qualitative methods, including the collection of background information, semi-structured interviews, field diary, and participant observation. Our results show that the social and political dimensions of the agroecological framework are approached by urban gardens in a larger extent compared to the productive one. We conclude that further research should deeply investigate the role of agrobiodiversity in urban gardens, since the maintenance of agrobiodiversity and its associated traditional knowledge is a basic element for social-ecological systems' sustainability.[1]**

***Keywords* – Agrobiodiversity; agroecology; social-ecological sustainability; traditional ecological knowledge; urban gardens.**

INTRODUCTION

Agroecology is a scientific and social practice critical of modern agriculture and its impacts. It fosters socio-ecological sustainability through the reconnection of social and ecological systems, and a balanced use of local resources. It emphasizes the application of participatory methodologies and seeks synergies between scientific and traditional ecological knowledge within a process of adaptation to local, cultural and environmental conditions. As a multi-dimensional framework it articulates three perspectives and scales: productive (farm level), social (community), and political (society) (Sevilla-Guzmán 2006). In the urban context agroecology is a common benchmark among self-governed community gardens, which in turn are claimed to be mechanisms for an agroecological transition in the cities (Gliessman 2013).Such a transition implies moving from an agrifood system which fosters inequality, destroys natural resources and cultural diversity, and does not guarantee access to healthy food, to an economically and environmetally sustainable system, which enhances social justice, cultural diversity, and food security (Guzmán et al., 2013). In this paper we approach how the agroecological framework is implemented in those urban gardening experiences in the city of Barcelona. In particular, we study how and to what extent each of the three agroecological dimensions is being developed.

METHODS

Our case study is Barcelona, Spain, where self-governed urban gardens are bottom-up gardening initiatives started by different social movements and groups, most of them originally squatted. We conducted research in 2013 consisting in two phases. First, in order to identify the self-governed urban gardens initiatives and compile background information we reviewed the literature on urban gardens in Barcelona, including scientific articles, master's thesis, and grey literature (e.g. policy documents, newspaper articles and web pages). Second, to understand how the agroecological framework is implemented in those initiatives, we used participant observation, field diary and semi-structured interviews (n=18). We followed Charmaz (2006) and coded relevant text passages from the voice records and the field notes in the three dimensions articulated by the agroecological framework: productive, social and political.

RESULTS

We identified 13 self-governed urban gardens initiatives in the city of Barcelona, most of them (10) starting after 2008, the starting year of the economic crisis in Spain. Nine of them have a unique parcel and manage the garden in a communitarian way, the other four have an allotment structure although they also have some common plots. Twelve urban gardens work on an assembly base while one of them does not have any clear decision-making process. We identified discourses tackling the three dimensions of the agreocological framework. In the productive dimension, gardeners highlighted the importance of organic production and their awareness of their own responsibility with the environment. As one gardener stated: "The vegetables are not treated with chemical stuff that affects the Earth". Concerning the social dimension gardeners highlighted the importance of urban gardens to enhance social cohesion and the possibility to cope with the economic crisis. In a gardener's words: "If we extend this initiatives it could be possible to supply the shortages of the crisis". In the political dimension gardeners conceived the garden as political endeavor to arise an agroecological conscience. As one gardener stated: "The garden is a political expression that seeks local production, seasonal food, and agreoecological awareness".

DISCUSSION

Our results show that the social and political dimensions of the agroecological framework are approached by urban gardens in a larger extent compared to the productive one. Indeed, stated motivations and benefits are mainly framed in social and political terms, pointing out that urban gardens

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enhance social cohesion and promote collective action (Anguelovski, 2013). However, we found that specific references to productive dimension-related benefits of urban gardens are less abundant and only refer to the practices performed to achieve an organic garden (e.g. non-use of chemical pesticides). None of the interviewees pointed out other facets of the productive dimension such as the maintenance of agrobiodiversity and its associated knowledge. In a recent review of 87 articles on urban gardening, Guitart et al. (2012) found that agrobi-odiversity has not yet been systematically investigated in urban gardens' literature especially in terms of traditional crop varieties and landraces. Landraces have been deemed essential to preserve agricultural genetic diversity (e.g. Altieri and Merrick, 1987), threatened by abandonment of traditional landraces and their substitution by commercial strains since the Green Revolution (Brush, 1980; Negri, 2003). In addition landrace conservation promotes the preservation of traditional ecological knowledge or the knowledge, practices and beliefs sustained by communities in interaction with their biophysical environment associated to them (Calvet-Mir et al., 2010, Calvet-Mir, 2011). Maintaining agrobiodiversity and its associated knowledge increases the functional response diversity of social-ecological systems and, hence, increases the resilience of agricultural systems and their sustainability (Jansson and Polasky, 2010; Barthel et al., 2014). We conclude that further research should deeply investigate the role of agrobiodiversity in urban gardens, since they are potential sites to conserve landraces from nearby rural areas and become a reservoir of agricultural genetic diversity enhancing agroecological transition.

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Finding spaces for Urban Agriculture to combat food challengesin Dhaka City

Md. Abiar Rahman[1] and Rob Roggema[2]

***Abstract* – Dhaka is the largest and fastest growing city of Bangladesh. A large number of people are moving from countryside to Dhaka for their subsistence, which already exceeded the carrying capacity of the city. A design week was organized to identify the problems of Dhaka city and design a sustainable food system. Due to overpopulation, poor management and unplanned settlements, Dhaka experiences multi-dimensional problems and challenges. The city is losing some 2.5 ha of fertile land every day to brick kilns, housing projects, industrial structures and roads. Waterbodies and wetlands have decreased by 53% in the last decade due to induced landfill for infrastructural development, while vegetation and cultivated land is reduced by 59% of. As a result, the food security of urban people in terms of availability and quality is poor. Therefore, food production at household level in urban areas could be a substantial solution. As most of the roofs of the buildings are flat, Roof Top Gardening (RTG) would ensure the supply of quality food at household level and improve the urban living environment.**

***Keywords* – Urban agriculture, food system, Dhaka city.**

INTRODUCTION

Dhaka, the capital of Bangladesh, is one of the fastest growing megacities of the world with a dense population (about 45000 people/km2) (BBS, 2011). Many people migrate from rural to urban areas, particularly to Dhaka, to get a higher income and better living. Dhaka is a sheer example of having a poor legislative framework, inefficient management and a lack of public awareness, which leads to an unplanned and resource consuming urban development. By now Dhaka is an uncontrolled and unplanned city. There is huge food demand in Dhaka and the lion share of the food supply is coming from the rural areas of Bangladesh. However, due to poor transportation facilities and a failing marketing system, the supply is not smooth. In some cases, food prices go up, which is beyond the purchasing capacity of poor and middle class families. On the other hand, the quality of food is a big challenge for the urban people in Bangladesh. A large amount of agrochemicals are used, not only during production but also for preservation, without considering health implications. The leads to serious risks for the people in Dhaka and urban areas, as harmful pesticides and chemicals are used during transportation and marketing. As a result food security is in Dhaka city is at critical level. Ideally a populous city like Dhaka should have its own mechanism of food production and food handling. Urban agriculture (UA) would be a good option to develop a sustainable food system under a changing climate. An intensive design studio was arranged at the VHL University of Applied Sciences in the Netherlands to find opportunities to improve the sustainability of the city and secure the food production and supply.

METHODOLOGY

The Dhaka design week is an initiative of the Professorship of Design for Urban Agriculture and was part of the graduation program of Landscape Architecture. It took place from 2-6 February 2015. The methodology used during the design week is closely related to the design charrette (Roggema, 2013), in which, introductory lectures, different sketching sessions, intermediate presentations and final presentations were part. The design task were split over five themes and three scales: energy, water, food, transport and urban metabolism at the scale of the entire city, one of five sections and local design details.

MAJOR OBSERVATIONS

Food resources: Raw food is sold at 87 wholesale markets within Dhaka City. Of these are 24 rice and 13 fish marketswith an estimated total number of 1.700 wholesalers(900 fish/800 rice) who work mainly as commissionagents by order of rice miller, pond owners or intermediarysuppliers in rural areas. Street vendors havean import role to bring the products to the consumers.The demand for safe and healthy food isgrowing quickly.The urban food system of Dhaka is experiencing a rapid growth of modern retail outlets. This modernizationprocess is driven by global change both interms of new global food chains, and changing foodand shopping preferences, and impacts the existingretail system of Dhaka. It gradually leads to shifts inits economic and spatial structure, but it also requiresspecific strategies from the new food entrepreneursand local producers to cater for the needs ofthe urban consumers.

Agriculture of Dhaka – change in production area: As mentioned before the region losesaround 2.5 hectares of fertile land every day. Official records show that four major locations and three metropolitan areas of the region lost 7,982 ha of agricultural land from 2002 to 2011.The annual loss of agricultural land in Dhaka during 2000-2010 was 0.65 percent while forest decreased to 3.17% during the same period (Personal communication). On the other hand, rural settlements, urban and industrial area, and charland increased by 4.78%, 8.75% and 9.81 % respectively during 2000-2010.

The Dhaka food system designed: The ambition for the food system is to organize a large(r) part of the food production within the urban boundaries. The time it takes to transport fresh products from the countryside to the city has a negative effect on the availability. In the design proposals, old river arms are opened up and connected with the broader river system. This provides an easy transport system, avoiding the hassle of the overland transportation, to

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floating markets and food hubs across the city. In densely built-up areas, other designs propose to implement urban farming on the rooftops of residential and governmental buildings. Tyres, plastic bottles and other waste materials can serve as containers for growing vegetables, herbs, potatoes, and fruits. The roofs are suitable for fish/aquaponics and keeping goats, pigeons or ducks (Roggena and Keeffe, 2014). The food system is designed based on different scenarios for the short and long term, and big and small scale (Fig. 1).

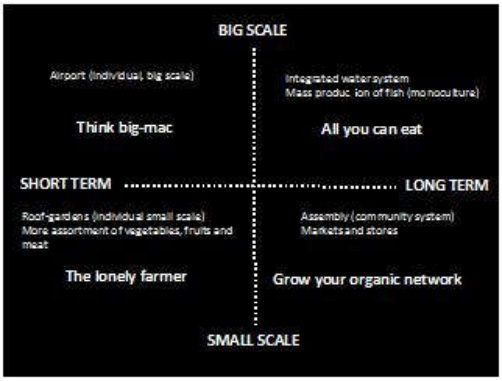

Figure 1. Food system development based on different scenarios. (Roggema et al. Rahman and De Vries, 2015)

Based on these scenarios, food production system can be designed (Fig. 2) as (a) Mass production in and alongside the river. Food is produced on buildings also to store food in. These buildings are used as distribution points. From here the food is transported to the inner city. (b) Some big establishments, such as the Airport have to move outside the city. The spaces coming available can be used for production of different kinds of food crops. This quality food can be distributed to different communities. (c) Markets in communities, selling food from outside the city, and food produced in the communities. (d) People produce and consumefrom their own rooftops. They eat their own food or bring surpluses to distribution points.

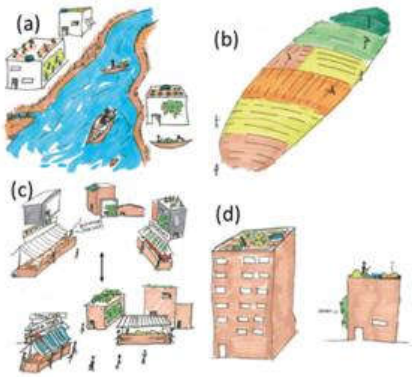

Figure 2. Designing of various food production and supply systems. (Roggema, Rahman and De Vries, 2015)

DISCUSSION

Dhakasuffers multi-dimensional problems such as urbanization, traffic congestion, water logging, solid waste disposal, black smoke from brick kilns and industrial emissions, sound pollution, pollution of water bodies by industrial discharge and,a newly added calamity, collapsing buildings(Labib et al., 2013). Recent data report that 53% water bodies and wetlands have been lost due to induced landfill for infrastructural development, while 59% of vegetation and cultivated land is lost, which is alarming (Mamun et al., 2013). In general, the people of Dhaka have to spend more than half of their income on food.Food security in terms of production, availability and access can be ensured through proper utilization of resources and planning of UA. Residents can produce their own foods, which is safe and of high(er) quality. This supports self-satisfaction as well. The design week came up with new insights and design innovations, which local planners and designers most probably never would or could propose. For the implementation of Urban Agriculturein Dhaka the design week offered the opportunity to develop spatial systems,and local food production, and to evaluate strategies and design concepts in a metropolitan context.

CONCLUSION

In the Dhaka design week problems of congestion, water management, food production and the creation of new public spaces and social meeting centers were developed. In the context of Dhaka's practice some of these design solutions are ambitious, but in a research by design context dreaming about future solutions leads to innovative and unprecedented designs. The short period of the intensive studio helped to focus on the essentials of food systems and relating to people's diets to the required productive areas. It also provided insight in the way sustainable designs are depending on circular economy, local production and recycling of material and renwable energy supply. Although there are many challeng to realise UA in Dhaka, planners, policy makers, development workers, researchers and local community should work closely together to improve the food system of the city.

ACKNOWLEDGEMENT

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The contribution of community food gardens to food sovereignty in Johannesburg, South Africa: a look at access and empowerment

B. Kesselman[1]

***Abstract* – This paper addresses the question of how urban community gardens contribute to food sovereignty. The paper focuses on two key elements of food sovereignty, namely access to adequate, nutritious, culturally appropriate foods and empowerment. Research was conducted at two case study gardens in socioeconomically deprived areas of Johannesburg, South Africa, with additional research at other gardens around the city. The paper finds that the case study gardens do improve access to food for garden participants and community members. They also contribute in limited ways to empowerment of garden participants. However, the transformative potential could be greatly enhanced through forming networks of garden participants to share information and mobilise for change.**

***Keywords* – access to food, urban agriculture, agency.**

INTRODUCTION

There is sufficient food available in Johannesburg to meet the requirements of all residents. However, food security in the city is a matter of access to food, rather than availability. Thus the high levels of poverty and unemployment translate into high levels of food insecurity. A survey,which included the areas where this research was conducted, found 56% of households were food insecure, with 27% severely food insecure(Rudolph, Kroll, Ruysenaar, & Dlamini, 2012, p. 9).

Urban agriculture(UA) has been found to improve food security and to contribute a significant amount of the population's vegetable intake in some cities of the south(Cole, Lee-Smith, & Nasinyama, 2008). Yet in Johannesburg, the practice of UA is very limited, estimated at less than 10% of households compared with a Southern Africa regional average of 22% (Crush, Hovorka, & Tevera, 2011).

In addition to enhancing the food security and livelihoods of the urban poor, some scholars view urban agriculture as an empowering activity that enables people to develop more control over the food system, or even as a counter-hegemonic attack on the corporate, neoliberal food regime (Bell & Cerulli, 2012). On the other side of the debate are those who see UA as a last-resort coping strategy that does not address the structural issues of poverty, unemployment and malnutrition (Bourque, 2000, p. 122).

This paper assesses the contribution of two community gardens to food sovereignty in Johannesburg. The concept of food sovereignty responds to food security's silence with regard to how food is produced, by whom, and who controls the food system (Schanbacher, 2010). It emphasises rights, democratic processes, local control and transformed social relations free of oppression and inequality (Nyéléni Declaration on Food Sovereignty, 2007). While food sovereignty has many components, this paper focuses on access to adequate, nutritious culturally appropriate foods and empowerment.

This paper seeks to add to the limited research on food gardens in Johannesburg, while also contributing to the global debate on what food sovereignty 'looks like' in practice, in an urban, developing world context.

METHODS

Qualitative research was conducted at two case study gardens (Suthani and Bambanani) in socio-economically deprived areas of Johannesburg, South Africa, with additional research at other gardens around the city. The research methods at the case study gardens include participant observation, three-day written and photographic food diaries and life history interviews, as well as key informant interviews with other relevant stakeholders such as garden customers, nearby food vendors and government and non-governmental organisation (NGO) personnel who support food gardens. The primary research complements an extensive review of relevant academic literature as well as policy documents.

RESULTS

The research found that the gardens do improve access to adequate, nutritious, culturally appropriate foods. There is no supermarket in the immediate vicinity of Suthani community garden and nearby informal vendors stock limited fresh vegetables. Thus the garden fills an important need in the area, providing a greater selection at affordable prices and saving customers the time and expense of a taxi ride to the supermarket. One of the main draws for customers at Bambanani, the other case study garden, is the wide variety of produce sold, including some traditional indigenous vegetables that are not found in nearby supermarkets.

At the two case study gardens, the gardeners produce vegetables to sell for income, though theymay also consume as many vegetables as they need. Both gardens regularly produce more than they are able to sell, meaning that there is usually a surplus for the gardeners to consume.

Both garden participants and their customers highlight the nutritional value of the vegetables. Customers indicate that the produceis fresher than in the supermarket, and that it "still has vitamins". Gardeners are aware that vegetables are the healthiest part of their diets (life history interviews).

However, despite improved access, most of the garden participants do not consume anywhere near

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the World Health Organisation's recommended five portions a day (400g) of fruit and vegetables. The food diary exercise showed that most gardeners consume diets of limited diversity and insufficient micronutrients. On average, participants said they consumed vegetables from the garden about twice per week, and rarely bought other vegetables. Asked why she did not eat more vegetables, one garden participant said it was "because I don't have time or I'm tired from working in the garden. They require too much work" (Interview, garden member, 19 December 2014). There also seems to be a lack of nutrition knowledge, as most participants said they eat healthy diets while their food diaries suggest otherwise.

In terms of empowerment, gardeners report gaining knowledge and skills, either through training or simply by learning from experience. Gardeners have interacted with local government officials as a result of their participation in the gardens, though most feel that these government officials do not really listen to them (life history interviews).

There are many concepts of empowerment. Kabeer conceptualises empowerment as a process that expands people's ability to make choices, through an increase in resources (material, human and social) and agency, 'the ability to define one's goals and act upon them' (Kabeer, 1999, pp. 436–8). The increases in knowledge and skills reported by gardeners would suggest an increase in resources, at least in the domain of food production. With regard to the broader institutional environment that shapes their access to food, the garden participants do not seem particularly aware of the working of the food system, nor interested in pursuing any change (life history interviews).

CONCLUSIONS

This research found that while community food gardens do contribute to food sovereignty in a number of ways, their transformative potential is not being fully realised. The case study gardens enhance access to fresh, nutritious and culturally appropriate vegetables for participants and the surrounding community, yet levels of vegetable consumption remain low. This indicates that improving access to vegetables is insufficient—in addition, nutritional education and cooking instruction are required. Contextual factors such as low incomes, limited selection of healthy foods in shops and high transport costs to larger supermarkets also play a role (Battersby & Peyton, 2014).

In order to gain greater control over the food and agriculture system, which currently limits people's access to healthy food, participants from food gardens would need to group together to press for change. That kind of social mobilisation is not evident at present. Hinrichs and Barham (2007) argue that scaling up local food initiatives can be challenging, but when individual local initiatives form networks, these can influence policy at higher levels. To date, neither case study garden has been able to become part of an active regional forum. Thus overcoming conflicts within and between gardens, and building networks to share information and advocate change, would be critical steps towards achieving food sovereignty.

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Sustainable management of green space in the city-region of Vigo, Galicia (Spain)

M.D. Domínguez García, P. Swagemakers, X. Simón Fernández[1]

***Abstract* – This paper exhibits how grassroots initiatives in the city-region of Vigo (Galicia, Spain) contribute to the effective reorganisation of the food system and the delivery of multiple sustainability and health benefits in the metropolitan area. While interpreting urban gardening in its wider sense the paper reveals how transformative strategiescontribute to reversing the disconnection between agroforestry production and food consumption through the recovery and maintenance of urban green space. Analysis is on the activities of 'comuneiros': citizens who together own and manage nearby located green space, and recover native forests and reintroduce small animal husbandry, activities which improve soil fertility and can result in the provision of high quality compost.Next, the paper discusses the potentials of a further integration of programmes and activities in the city-region, in particular interrelations between agroforestry activities and different modes of horticulture production. Finally, remarks are made on the implications of improved interrelations for food and nutrition security.**
***Keywords* – Grassroots dynamics, Food systems**

INTRODUCTION

Global challenges linked to food scarcity, environ-mental degradation and climate change call for empirical research on how to reorganise the food system effectively (Marsden and Sonnino, 2012). Next to subject of how food is produced, consumed and distributed (Goodmand and DuPuis, 2002; van der Ploeg, 2014) green space in metropolitan areas is increasingly considered as asset to deliver multiple sustainability and health benefits to the urban population (Forster and Getz Escudero, 2014). The question on how to achieve long-term social and ecological resilience leads Westley et al. (2011) to explore the links between agency, institutions and innova-tion, and in particular the position of viable shadow alternatives and niche regimes. This brings the focus of research on transformative strategies that, among others, provide high quality compost and improved soil fertility (Foran et al., 2014), and contribute to a sustainability transformation in which human and environmental interactions and feedbacks funda-mentally alter (Walker et al., 2004; Olsson et al., 2014). In this context, thisshort paper aims to offer empirical insights on the (potential) contribution to reversing the disconnection between agroforestry production and food consumption bygrassroots initiativesin the city-region of Vigo.

GRASSROOTS DYNAMICS IN THE CITY-REGION OF VIGO

Case study research is applied in the metropolitan area of Vigo, Galicia (an autonomous region in the northwest of Spain). With 300,000 inhabitants Vigo is the largest city in Galicia. Around 30% of the land in the city-region (480,000 inhabitants) is a common-pool resource: it is land owned and managed by 'comuneiros', i.e. citizens who together decide on the use of nearby located green space. This land (about 24,400 hectares in total), also located within the city boundaries, most often consists of Monte, traditionally a multifunctional mountainous zone covered by trees, bushes and scrub. For its managementcomuneiros are organised in 'Comunidades de Montes Veciñais en Man Común' (CMVMC, Neighbourhood Communities for the Common Management of Monte) (see DomínguezGarcía et al., 2015 for details). The programmes and activities of three out of about 100 CMVMCs in the area are analysed in relation to horticulture production in the area.

The findings are based on primary and secondary sources consulted in the EU funded research project SUPURBFOOD. Materials were derived from interviewswith key-informants (comuneiros, horticulturists, government representatives, activists, citizens), participatory observation (joining activities) and desktop studies (brochures, websites, research reports). Comuneiros have been actively involved in the project: as consortium member influencing the orientation of research activities and as guest speakerat the SUPURBFOOD Urban Food Forum, in a session on the management of urban green space recommended to over 420 participants from 56 countries in the ICLEI Resilient Cities conference in Bonn, Germany (Swagemakers et al., 2015).

VIABLE SHADOW ALTERNATIVES

In Galicia, law obliges CMVCMs to reinvest 40% of the annual turnover in land management and improvement. Research results reveal that the programmes and activities of grassroots initiatives hold potentials to contribute to the social and ecological resilience of the management of green space in the city-region.

Grassroots programmes and activities

The CMVMC Coruxo runs facilities to process Vigo's green waste: a bio-shredder to recycle 4,000 tons of biomass at annual base. The idea is to combine the own 342 hectares of forestry activities with input of green waste from the city and produce pressed saw dust on which heating of public buildings can run.

The CMVMC Vinciosrents out some of its land to industries located in the valley, and together with the income from wood production invests about 65% of the turnover in projects to sustain its 678 hectares of common land so asafforestation with chestnut trees and leafy deciduous species, extensive pasturing of cattle (goats, cows and horses), and mushroom production. Together with other CMVMCs it designed a biomass plant that should produce compost derived from removed scrubland and clearing up plantations in combination with green waste of households.

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The CMVMC Teis improves the landscape aesthetics and biodiversity of its 50 hectares through the plantation of native trees. This results in a public function at only a few kilometres from downtown. Further the land has scenic views over Vigo's bay. Directly located next to the entrance ofVigo Zoo there is a zone with different autochthonous trees planted together in which educational programmes on biodiversity conservation run.

Promoting resilience at the local level

Next to the provision of landscape aesthetics and biodiversity,the strategiesresult in improved soil fertility and quality compost, which potentially become available for the many traditional kitchen gardens, commercial horticulture activities and recently initiated community gardens in the city itself and its urban fringe. Next to attractive business models the programmes and activities of the initiatives generate also new employment opportunities in the area.In order to counterforce the regional programme on mono-forestation, wind parks and mining activities (Dominguez et al., 2014) the creation of an urban department on urban resilience and climate adaptation could support the implementation of these programmes and activities in the city-region, and encourage the effective reorganisation of the food system and the delivery of multiple sustainability and health benefits in the area. The programme of the municipality 'Camiño a Camiño' (which promotes organic farming and protection of the environment to citizens in Vigo) together with similar programmes in other municipalities in the city-region can be perceived as a starting point for further integration of grassroots dynamics.

FINAL REMARKS

In the city-region of Vigograssroots initiatives recover and maintain urban green space. This includes the recovery of native forests and the reintroduction of small animal husbandry, and results in the provision of high quality compost and improved soil. Future research could focus on interrelations between management of the commons and vegetable production in traditional kitchen gardens, commercial horticulture activities and community gardens. Next to the delivery of multiple sustainability and health benefits this could provide insights in how food and nutrition security is rooted in local ecosys-tems and active engagement of local actors.

ACKNOWLEDGEMENT

Research findings were generated in the EU granted project SUPURBFOOD. We are especially grateful to the comuneiros of Vincios, Teis and Coruxo for explaining the possibilities for sustainable management of green space in and around Vigo. The correct representation of the argument in this paper and the contents of the case studies remain the authors' responsibility. The European Commission cannot be held liable for any use that may be made of the information contained herein.

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Grassroots versus business oriented short food chain models - competitors or partners? Evidences from Rome and Zurich.

S. Grando, I. Jahrl, L. Ortolani[1]

***Abstract* – Short food supply chains (SFSCs) reconnect food production and consumption. They can be based on grassroots initiatives, relying on community engagement and voluntary work, as well as on businesses committed to social and ecological goals. These goals do not necessarily limit profitability: on the contrary they can be a base upon which a short chain business can be established.**

The paper analyses six SFSC initiatives established in two urban areas (three in Rome, three in Zurich). They are promoted and managed by different actors (farmers, retailers, consumers) and range from farms direct selling to box schemes to CSA. Some are more business- others more grassroots-oriented.

The research reveals that different organisational models of SFSCs' are complementary as they match different needs of different actors, and respond to diverse logistical conditions. A distinction between grassroots- and business-oriented initiatives is not useful, as social goals and the search for economic sustainability often co-exist in the same initiatives and reinforce each other.

***Keywords* – Short food supply chains, Grassroots initiatives, Urban food systems.**

INTRODUCTION

Short food supply chains (SFSCs) aim to reconnect consumers and farmers, increasing mutual control on the food chain and potentially fostering a relationship of value and meaning around food production. Different organisational SFSC models have been developed in the last decades ranging from business to grassroots initiatives, based on community engagement and voluntary work. In both cases social and ecological goals do not necessarily limit economic sustainability. SFSC initiatives can be promoted and led by farmers, consumer or even retailers, where required logistic is more complex. Retailers can also function as brokers between consumers and farmers, if they works this direction. Innovative organisational models of SFSCs and grassuroots initiatives developing on urban and peri-urban agriculture are attracting a great interest in the academic field (Jarosz 2008, Khan and Prior 2010, Aubry and Kebir 2013) and beyond (RUAF 2015).

This contribution, based on work carried out for the EU-project SUPURBFOOD (Sustainable Urban and peri-urban food provision), is based on the analysis of six SFSC initiatives in two metropolitan areas (three in Rome, three in Zurich). They are promoted and managed by different actors (farmers, retailers, consumers) and range from direct selling to box schemes to CSA.

This paper aims at:

- Highlighting different models of grassroots and business SFSCs and analysing the relations of competitiveness and/or complementarity between them;
- Analysing the role that specialised retailers can play to connect urban consumers with urban and rural farmers.

METHODS

The research has been conducted through to the following main steps:

- Analysis of the city-region contexts through desk research (policy documents, databases, previous studies conducted in the area).
- Interviews with the owners/managers of the six initiatives with a focus on the organisational model of their business.

The six initiatives have been analysed (table 1) with focus on their grassroots versus business characters, yet not looking for a mere classification, and they have been framed according to the type of promoters and of the chains established. The aim was to understand to which extent the initiatives were referable to each of the two models and to highlight how different aims, arrangements and models enter in a competitive and/or complementary relationship.

Table 1. Classification of the six initiatives studied

Initiatives	Promoters	Type of chain
Rome		
CAN	Farmers	Multiple
Zolle	Retailer	Box scheme
Casale Vecchio	Consumers	CSA
Zurich		
Pico Bio	Retailer	Intermediary
Pflanzplatz Dunkelhölzli (PD)	Consumers	CSA
Tor14	Consumers	Box scheme

RESULTS

Leadership of SFSCs initiatives ranges from farmers (CAN) to consumers (Casale Vecchio, PD, Tor14) to single entrepreneurs (Zolle, Pico Bio). This strongly influences the development of the organisational models depending on the main focus of the initiative.

While CAN and Pico Bio put great emphasis on producers' needs, Zolle looks more at consumers' preferences and represents (as well as Pico Bio) a trusted small sized intermediary on the local market. Zolle, Pico Bio and Casale Vecchio show a clear

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business attitude, but their search for profit largely rely upon the valorisation of elements of local sustainability, fairness, trust and personal relations that are shared by many grassroots and community-led initiatives.

TOR14 and PD are organised and led by consumers and in this sense they are examples of communities which engage in grassroots projects. They provide consumers the possibility to actively engage in sustainable food provisioning. Consumers are involved in decision making. In the case of PD, voluntary work is base of the initiative.

The analysis shows that types of organisational models can change over time. CAN started as a typical grassroots initiative and then developed into a business, yet still consistent with its original aims and practices (all profit re-invested in the farm, similar wages for every worker, connection with social movements). Casale Vecchio led by consumers and initially more aimed at social goals, resulted to be a more profit-oriented business in which consumers tend to act more and more as investors.

The in-depth interviews conducted with the promoters and owners of these initiatives gave interesting insights to the study of innovative organisational models of SFSCs in urban areas.

For an urban consumer group, buying all food directly from different small farmers can be inefficient for the time required and not satisfactory in terms of food variety, freshness, quantity and timing. In this concern, trustworthy retailers sharing the same consumers' (and farmers') ideas can function as brokers to increase the efficiency of SFSCs.

When farms are efficient enough to organise themselves and manage directly its market chan-nels, direct selling or farmers-managed box schemes are established without reliance on middle persons. However, specialised retailers supporting the SFSCs values could have a twofold objective: to allow rural farmers in more isolated areas to reach urban consumers and to improve the efficiency in the logistic of peri-urban farmers that have sufficient production to enlarge their market. Farmers often consider retailers as one among several opportunities for market diversification.

Retailers' relationship with farmers reveals complementarity and synergies in good harvest years, but also competitiveness in bad harvest years when production is lower and farmers tend to privilege direct selling. A need to share the entrepreneurial risk of agriculture between farmers and small scale retailers exists and should be taken into consideration when creating partnerships.

Aggregation of production is required for the delivery of fresh local (often organic) food to restaurants and catering services. Local quality food availability is still rare and small farmers can hardly have access to this very fruitful market. In this case SFSCs fill a gap that other cannot fulfill, either through specialised retailers or with the direct involvement of farmers when they are large and organised enough to bypass intermediaries, retaining a higher degree of control on the whole chain.

These findings lead us to consider that the di-chotomy between grassroots and business oriented initiatives is not highly relevant when SFSCs are concerned. Beyond their differences, the initiatives analysed are all focussed on social (and to a minor extent ecological) goals, like small farmers' survival, fair workers' income, healthy food, food consumers' activism. These aims co-exist with the attention paid to the possibility to develop a business and to gain profits.

CONCLUSIONS

Research findings reveal that a range of "grassroots" and "business"-like characters co-exist within the same initiatives of SFCSs, assuming higher or lower relevance during the various steps of their development.

Urban contexts ask for the development of innovative SFSCs organisational models matching farmers' and consumers' needs, since they provide a critical mass of interested consumers supporting SFSCs through their consumption choices and their direct involvement.

Urban consumers' diversity and complex urban logistic, often require brokers and facilitators to develop efficient SFSCs. Specialised business actors, but also farmers themselves and, not least, consumers' groups, can play this role.

Different SFSCs typologies respond to different needs expressed by both farmers and consumers. In this sense complementarity can be seen between different organisational models that look at best solutions for different actors.

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Bricolage, local food and sustainable urban development

Ilona Kunda, MikelisGrivins, Talis Tisenkopfs[1]

***Abstract* – In this paper we explore the contributions to sustainable city development by a farmers' market (Kalnciema Quarter (KQ) in Riga), analysing the multiplicity of functions and their synergies that this initiative has given rise to: cultural, educational, community-building, self-expression, place-making, etc. We address the research question of how the synergies of various functions emerge connecting local food acquisition and consumption with other activities and functions, i.e. how multifunctionality comes into existence. We use the concept of bricolage, which emphasizes the gradual and iterative building on what is at hand, through redefining and recombining resources. We argue that synergies of functions around urban food may develop as bricolage, co-produced by a range of stakeholders, importantly including consumers. We demonstrate how bricolage connects diverse interests, spheres of activity andsocial groups, local food related experiences reinforcing sustainable urban lifestyle values.**

***Keywords* – local food, multifunctionality, bricolage, co-creation, experience economy.**

INTRODUCTION

Food is increasingly recognized not only as a rural, but as an urban issue, with policy and scientific analysis directed at food-related activities in urban and peri-urban areas (for example, see www.supurbfood.eu). We note numerous developments and their conceptualisation both with regard to production of food (urban and peri-urban agriculture), the ways it reaches consumers, gets accessed, consumed and recycled.

An ever-present concern with regard to urban and peri-urban food is the various aspects of sustainability. One way to address these is to advance multifunctionality, meaning that activity or resource can have more than one function, and create synergies by interactions between activities (Renting et al 2008), thus having the potential to produce multiple kinds of desired sustainability-related outcomes from one set of resources.

The attendant social, economic and environ-mental benefits of multifunctional agriculture, as well as its challenges are now quite well documented (e.g. Zasada 2011). Additionally, the multiple benefits of closing the social distance between the production and acquisition of food are examined. The discourse on the particular values of "local" food (although by no means devoid of internal contradictions) has also gained considerable prominence in public attention, thus adding new layers of meaning to food acquisition and consumption.

It is precisely the sustainability potential of initiatives bringing local food to urban consumers that this article addresses. We will examine a privately initiated and maintained farmers' marketin Riga as the starting point for local food acquisition and consumption, and demonstrate how this practice eventually forms a dense web of multiple social, economic, ecological and place-making functions, valued by city-dwellers and agents from strikingly diverse activity fields. Thus it appears to have considerable potential in the context of sustainable urban development.

Development of multifunctionality is a dynamic process, rooted in current and historic practices and meanings, but also unfolding and shifting (Renting et al 2008). The important issue to examine is precisely the mechanism of the emergence of multifunctionality in a specific urban context.

We examine the micro-level of interactions, trade-offs between various objectives and meanings, the interactions of stakeholders as often incidental, oscillating between profit-making and social goals, and non-linear.

In other words, we examine how agents make things happen by ad hoc doing, constructing the resources at hand as valuable and useful, and recombining these, i.e. by bricolage.The concept has been first proposed by Levi-Strauss (1966). The key traits of bricolage are seen to be making do, refusal to enact limitations, improvisation (Baker and Nelson, 2005); studies of social entrepreneurship have also examined the more relational and social traits (Di Domenico et al, 2010).

The concept of bricolage has mostly been popular in entrepreneurship and social technology studies, addressing resource scarcity and/or collective iterative experimentation to arrive at the technological solution.

Our study is somewhat set apart in that the subject of our study is a SME balancing economic and sustainable lifestyle promotion goals, co-creating a set of experiences rather than technologies, and engaging with an extremely broad range of stakeholders in an open-ended process of development – with food acquisition and consumption in a highly distinctive urban place its starting point. We are not aware of other studies linking farmers' markets, multifunctionality and bricolage.

The study poses the following research questions: 1) How the complex interplay and synergies of various functions emerge and develop around connecting local food with other activities and functions within a distinctive urban space?2) What traits of the examined interactions promote synergy-formation in the specific context? 3) What is the potential ofthe KQ farmers' market in reinforcing sustainability values and practices? 4) What are the limitations of multifunctionality creation through bricolage?

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METHODS

The data was gathered in 2012 – 2015, by using the case study method; examining a series of micro-cases introducing a new activity and assessing its outcomes. We conducted semi-structured interviews, participant observation and analysis of social media communication with consumers, placing these into the context of historical accounts of the initial phases of KQ activity from documents and media sources. The study was participative: the results of function mapping were created and examined jointly with key KQ staff and verified with a broader range of stakeholders. Analysis of data was performed by using constructivist grounded theory procedures, informed by the concept of bricolage.

MAJOR FINDINGS

Local food acquisition and consumption-related activities in a farmers' market may give rise to a loose, constantly shifting web of activity providing social, cultural, environmental, community-building functions, and reinforcing sustainability-related values.

Synergies of functions indeed develop as bricolage: as context-dependent iterative co-production of resources and meanings. Synergies are promoted by the context of experience co-creation (facilitated by the symbolic value of local food and authenticity, plentiful opportunities for interaction in a distinctive urban place, resonating with sustainable urban lifestyle values). Consumers are important agents of co-creation.

Institutionally, synergies are promoted by combining monetary and non-monetary relations, negotiating trade-offs between the various functions, including the economic one; following the lead of active stakeholders in adding activities (i.e. being consciously open); promoting product experimentation and self-expression in farmers who are market suppliers, maintaining broad overlapping networks with a diverse range of stakeholders.

Defining and redefining of the meaning of activities is constant; it is shaped not only by local context but also global trends (the rise of farmers' markets).

DISCUSSION

The findings of the study attest to the multiple benefits of open-endedness in managing a local farmers' market. It does bring in additional community-building benefits, gradually dissolves roles and boundaries, and connects diverse interests, spheres of activity and social groups.

We may argue that consumers as co-creators of market experiences blur the conventional consumption-related roles; interaction around the co-created experience of local food acquisition and consumption does promote community building, innovation, reinforces sustainable lifestyle values. Both supply and demand sides are important in multifunctionality evolvement.

Local food acquisition and consumption may contribute both to urban-rural linkages (self-organisation of farmers, product innovation) and sustainable urban development.It may even bridge the local-global, by anchoring a virtual community of farmers' market fans.

We attribute these positive outcomes to the open-endedness of bricolage, combined with the symbolic binding value of local food.

However we should end with a word of caution. Multiplicity of functions and broad overlapping networks of stakeholders all require extensive institutional maintenance, and following the lead of public desire for new experiences may render an enterprise less than viable economically. As shown by Baker and Nelson (2005), strong social relation building may hamper profit-generation opportunities. To continue providing the valuable space for urban sustainability outcomes, broad-range bricolage could be complemented by a traditional income-generating mode of activity.

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Urban agriculture in Pune, India: Practice, spatial context and community interaction

Ingo Zasada, Siddhartha L. Benninger[1]

***Abstract* – A survey among gardeners was carried out in Pune, India to investigate the situation of urban agriculture (UA) in residential areas and to identify the influencing factors for the gardening practice. The study found that UA represents a traditional food production activity, which has its origin in organic waste management. The UA practice has a strong environmental and organic orientation. Especially motivation, knowledge transfer and community em-beddedness plays a major role for the UA practice. They draw the existence of a socio-ecological system, with close inter-linkages between community and environmental practice. Particularly gardeners' clubs play an important role as knowledge brokers within the community. Concluding, UA represents a continuous and stable source of fresh vegetable food, contributes to social capital and community building as well as knowledge transfer not only for food production, but also for social and environmental purposes more holistically.**

***Keywords* – Cultivation practice, Built environment, Community embeddedness, Resilience, Food security, Ecosystem Services, Interview Survey.**

INTRODUCTION

Increasing relevance of enhancing urban resilience against a variety of global driving forces, food pro-duction in urban areas has gained grown attention among the academic and planning community (Barthel and Isendahl, 2013; Opitz et al., 2015). This is particularly the case in fast urbanising societies of transition countries, where strong rural rooting, community and family orientation as well as the prevalence of dietary traditions is confronted with a high pace of urban growth, changing lifestyles and food security problems of the urban poor (Zezza and Tasciotti, 2010). Between these poles traditional forms of urban agriculture (UA) remained in housing environments, backyards and kitchen gardens are complemented by urban lifestyle-oriented micro-scale gardening in and on top of buildings (Specht et al., 2014). However, actual cultivation practices and the related provision of food and other ecosystem services are strongly depending on internal and external factors and drivers, such as the built envi-ronment, individual characteristics and capabilities (Pearson et al., 2010). Particularly community em-beddedness and knowledge transfer as well as moti-vation differences are expected to entail conse-quences regarding the UA stewardship (Ghose and Pettygrove, 2014; Scheromm, 2015).

In our study we investigated the UA situation in residential areas of Pune, India. Our research aimed at analysing (i) UA practices, (ii) UA community and framework conditions, and (iii) the influence of these independent variables on the UA practice.

METHODS AND DATA

A questionnaire survey among 120 gardeners in residential areas of the city of Pune (Maharashtra, India) was conducted. Pune is a fast growing metro-politan area of more than 5 Mio inhabitants in the foothills of the Western Ghats with typical monsoon climate (15-35°C, av. 700 mm annual precipitation, mainly during rainy season).

The scope of residential UA activities was based on a comprehensive typology of (Behmanesh, 2009). The sampling started with interviewing members of an organised gardening club (INORA, www.inoraindia.com) and was rolled out using a snowball sampling method as interviewed gardeners were asked for further potential interviewees. The survey was carried out as face-to-face interview with mainly close-ended questions (single and multiple responses) between January and May 2014.

The UA practice encompasses aspects of cropping pattern (10 variables), cultivation management (11), activities (4), input source (9), and application of facilities (4). The independent, explanatory variables include the spatial of housing and gardening setting (4 variables), the bio-demographical situation (9), community embeddedness (6), knowledge transfer (3), motivation (5), and limitations (4).

The statistical analysis was carried out using SPSS software package 19 for descriptive statistics (value distribution, frequencies, etc.) and bi-variate analysis of nominal/ordinal scale variables (cross-tabular comparisons).

RESULTS

UA practice

Despite being small cultivation area size,UA is characterised by large number of vegetable (>70, mean 12.6±7.4) and fruit tree types (>30, mean 6.5±3.6) and non-edible plants (74% have >10 ornamental trees) cultivated. Many gardeners apply systematic cropping system, including crop rotation (35%), non-conflicting (39%) and supporting cropping (25%). Cultivation is dominated by organic, non-chemical practices, such as for fertilisation (90%), weeding (89%) and pest control (69%). In a large majority of cases (82%) organic production principles are coupled with organic waste management. For irrigation, gardeners rely 70% on public water supply. In the majority of cases, additional recreational (68%) and ecological facilities (64%) are found. Accordingly, gardens are frequently used for recreational or socialising purposes.

UA community and framework conditions

Depending on the urban environment the results show a dichotomised situation of UA withmainly backyard cultivation in detached housing and small kitchen

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gardens attached to buildings in densified urban areas. Urban agriculturerepresents an established phenomenon, as 60% conduct food production for >10 years and 31% even >20 years. The gardening community is rather aged (83% >45 years), merely female (69%), of higher education (93% graduation) and has small households (<30% >4 HH members). Strong community network ties were found (40% are linked to >5 other gardeners, 12% >10), through which knowledge, products and inputs are distributed.

Dependencies of UA practice

Cross-tabular comparisons revealed significant dependencies between UA practice on the one side and UA community, i.e. motivation (23% of significant comparisons), knowledge transfer (18%), community embeddedness (17%) and framework condition, i.e. garden and housing setting (19%) on the other. Limitations and socio-biographic characteristics play only a minor role. Their influence differs for various aspects of UA practice (Fig.1).Exemplary relationships encompass:

- Importance of food productionfor daily diet increases crop diversity and reduces pesticide application
- Knowledge from workshop or books encourages crop rotation practices and compost use
- Lack of knowledge and small gardeners network increases probability of application of chemical inputs
- Bungalow housing type supports compost source from garden material, own seed propagation and water supply (well)
- Large gardener network relates to higher probability to receive soil from somewhere else and seeds from other gardeners

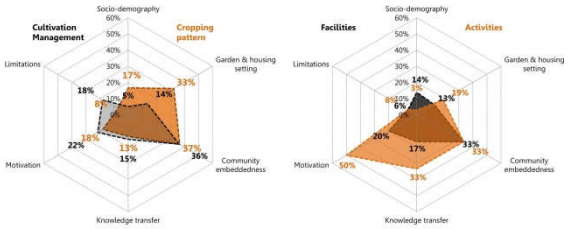

Figure 1. Share of significant cross-tabular comparisons between UA community & framework conditions and UA practice. aasymptotic significance (Pearson chi-square) <.05).

DISCUSSION AND CONCLUSION

Within city administration, agriculture and food production is often considered as something old-fashioned, anti-urban and hampering progress. Rapid urbanisation and loss of farmland in the vicinity of Pune, such as in many metropolitan areas increase urban vulnerability to comprehensive food supply. UA activities in residential areas make a significant contribution to sustaining and distributing knowledge within the community of practice. It is also attributed to other benefits, such as community building, management of green spaces and ecosystem service provision, incl. local climate, biodiversity and cultural services.

The UA in Pune does not differ substantially from equivalents in developed countries not only in terms of social milieu, motivation and community-basis, but also in the way how UA is practiced (organic, small-scale, and recreation-oriented). It is characterised by a high degree of professionalisation with a structured knowledge transfer and cultivation practice. It clearly represents a projection surface, reflecting the community's environmental behaviour.

However, the UA studied in Pune cannot be easily taken as a model to address the food problems of the urban poor. Often the cultivation is characterised by a low cost-effectiveness in terms of food quantity produced. Due to dependence on public water supply, UA also increases water stress during dry season. Low-income housing areas also possess different framework conditions (e.g. space to grow, den-sity, pollution), which require careful consideration for applicability and transfer.

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What can university community gardens offer an 'alternative' food system?

Rebecca Laycock, Dr Zoe Robinson, Dr Sherilyn MacGregor[1]

Abstract **– The Community Garden (CG) movement makes up part of an 'alternative', and ideally more sustainable, food system.1 CGs in a university setting have been reported to have an impact on sustainability attitudes and behaviour, and their most common participants are students which have often just moved from home and are highly transient. Based on these two facts, we argue that university CGs, in spite of being a only small section of the CG movement, provide three important contributions to an 'alternative' food system: (1) An understanding of the management of volunteer-led sustainability projects/organisations, (2) Enabling students to develop as activists and change agents and to make changes in the food system, and (3) Encourage young people to develop sustainable food habits that may stay with them throughout their lives.**
Keywords **– students, volunteers, higher education, transience, turnover, sustainability, activism, urban agriculture.**

INTRODUCTION

Community Gardens are "open spaces managed and operated by members of the local community in which food and/or flowers are cultivated" (Guitart et al., 2012, p. 364). Over recent years there has been a growth in food-growing community gardens on university campuses (Bartlett, 2011), which contribute to an 'alternative', and ideally more sustainable, food system. Higher Education Institutions also have the potential to contribute to wider transformative change in the larger food system by shaping how people relate to and consume food. This can be through experiences of campus food growing, education activities, and food purchasing options. The most commonly reported participants of university CGs are students, meaning the gardens have a different participant demographic from many other CGs, being highly transient (having anticipated, high turnover rates), and many of the participants are experiencing moving from their parental home for the first time. University CGs are also associated with benefits such as improved attitiudes and bahevaiours towards sustainability of their participants (Apul & Philpott, 2011). In this paper, we argue that while they are only a small part of the community garden movement, university CG settings are important for (1) understanding the management of highly transient volunteer-led sustainability organisations and projects, (2) enabling students to take develop as activists/change agents and make changes in the food system, and (3) encouraging young people to develop sustainable food habits.

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UNDERSTANDING THE MANAGEMENT OF VOLUNTEER-LED SUSTAINABILITY ORGANISATIONS AND PROJECTS

Organisations that depend on volunteer energy (such as sustainability projects like CGs) benefit from understanding the dynamics of volunteer turnover (the rate at which volunteers are replaced in an organisation) because the challenges that present themselves in these organisations are different from those with stable social structures. Efficiency and effectiveness can be compromised in these projects because incoming volunteers need time to learn how the organisation works, and this is made even more challenging when special skills are required because it can be difficult to pass on knowledge between waves of volunteers. As a result, the organization may repeat efforts (or even mistakes) because of a lack of adequate knowledge transfer. In the case of universities, students may initiate projects that are already existing because they lack knowledge about the local area and what projects are already being done. This can cause tensions and reinforce the separation between students and people who live locally because their work is being neglected and/or duplicated by students. The lack of knowledge about the local area can also negatively impact students because they may miss out on the opportunity to learn from local organisers as well as benefitting from pooling their resources to ensure the longevity of their projects. Therefore, because university CGs have such transient participants, studying them can help contribute to an 'alternative' food system by helping understand the management of volunteerled sustainability organisations and projects.

ENABLING STUDENTS TO DEVELOP AS ACTIVISTS/CHANGE AGENTS

Participants in university CGs are unique because student activists have the agency to choose what issue they address. However, they tend to be constrained by limited life experience and resulting lack of tacit knowledge needed to take effective action. In spite of this, the agency they do have is a valuable asset because well-intentioned non-profits (while playing an important role in activism) can "steer people away from grassroots movements" in order to appease funders or the public (Adrangi, 2013). Examples include email campaigns/online petitions, where messages are tailored (and diluted) to increase click-through rates/signatures (White, 2010), and NGOs dependency on government grants resulting in a focus on 'fundable' functions rather than addressing locally relevant issues (Edwards & Hulme, 1996). Because student activists aren't bound by the need to appeal to specific groups, they have a special role within activism where they can draw attention back to these important local issues. University CGs are a vehicle for students to engage in activism where they can learn about mechanisms to make change most effectively.

In this way, they can make use of their activist role to contribute to changes in the wider food system, both in community gardens and larger organisations, as well as by taking these activist/change agency skills out into other areas and their life beyond their time at university.

ENCOURAGING SUSTAINABLE FOOD HABITS IN YOUNG PEOPLE

It has been theorised that one way to break strong habits is through interventions at a life event in which a person undergoes substantial changes (Schäfer et al., 2012). For example, parents have been found to be more receptive to information about health and sustainability during pregnancy and shortly after childbirth, and have also made changes to their shopping, favouring more 'sustainable' options like "organic, seasonal, fresh, and regional foods" (Schäfer et al., 2012, p.67). Since the majority of participants in university CGs are students, many of them have just moved from their parental home and may be cooking, food shopping, and taking part in a range of other activities with sustainability implications independently for the first time. It has been speculated that this move to university could be a 'life-course transition' which could be used to encourage more sustainable attitudes and behaviours in students (Thompson et al, 2011).

If this is the case, these changes to students' food practices may be carried with them throughout their lives. Some encouraging facts that support this idea is that there is evidence that volunteering in a university CG can improve self-esteem and self-efficacy (belief in one's ability to achieve goals) (Teig et al., 2009). Since a lack of self-efficacy is a barrier to engaging in recycling-related behaviour in students (Ojala, 2008), it may be possible that this is the same for ethical and eco-friendly food behaviours, and CGs could help address these barriers. However, it is also possible that the transition from university to working-life may be another key event in a person's life-course which could 'undo' the habits learned at university. Therefore studies are needed to explore whether sustainability interventions taking place in universities impact attitude and behaviour both during and after university. If this is the case, university CGs have the potential to be an effective tool to encourage young people to develop sustainable food habits that may stay with them throughout their lives.

CONCLUSION

University CGs provide an understanding of the management of volunteer-led sustainability projects/organisations, enable students to develop as change agents and take advantage of their role in activism to make changes in the food system, and engage students at a point in their lives in which they may be more likely to make changes to their food habits in favour of sustainable practices. In these ways, university CGs provide both insights and tangible contributions to the development of an alternative, sustainable food system.

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Comparative study on urban community gardening in Central Eastern Europe

Pal Goda, Nikola Trendov, Mate Kis[1]

***Abstract* – The aspiration of launching urban community gardens is spreading in Central Europe. The joy of common work and spending meaningful time in well-designed gardens could bridge the gap between community where common understanding and social responsibility can be established as well. The aim of this paper is to compare existing practices of urban gardening in the Central and Eastern European (CEE) region and investigate their opportunities and limitations. The authors compared five capital cities (Budapest, Bratislava, Prague, Warsaw and Zagreb) with a predefined benchmarking analyses method including: location, size, purposes, growing varieties and final beneficiary.**

***Keywords* – community gardens, urban agriculture, Central Eastern Europe**

WHAT IS KNOWN ABOUT URBAN COMMUNITY GARDENS IN CENTRAL EUROPEAN CITIES?

Urban agriculture as the production of food and other goods within the cities nowadays is an upcoming phenomenon in the urban landscape design (Van Veenhuizen and Danso, 2007). Urban agriculture plays a key role in two worldwide challenges: urbanization and food sovereignty therefore providing an important contribution to sustainable urban development. It has been estimated that 15-20% of the world's food is produced in urban areas (Armar-Klemesu, 2000).

Community gardens are one possible manifestation of urban agriculture. In their case the emphasis shifted from mere agricultural resource production to strengthening communities, bringing together common residents and organizations. This is, to some extent a change compared to the past forms of urban agriculture.

To understand how urban gardening works nowadays in CEE it is essential to know how it started and why. The moments of greatest growth of urban gardening are linked to the economic crisis in 1970s, when people had to resort and ensure their self-sufficiency through urban agricultural production. Urban gardens date back to the 1960s, were set up for CEE cities with over 50,000 inhabitants permanently settling in and connecting with industrialization, rapid rural-urban migration, and the need to ensure food for the urban poor and promote factory workers (Duzi et al., 2014).

METHODOLOGY

This paper uses data gathered from existing case studies and together with the scientific literature formed base for triangulation. Several existing projects were analyzed from five capital cities of Central Europe (Bratislava, Budapest, Prague, Warsaw and Zagreb), so the selection was based upon the diversity of delivered goods and services.

The authors used a benchmarking method that includes the following measures: How many community gardens exist in the city? What are the purposes of these community gardens (community building, educational and drug prevention programs, therapeutic garden, local food supply, greening the environment)? How is the cooperation of the community gardens with the local actors and social network (municipalities, NGOs, schools, nursing homes, hospitals, ambulances)? What is the usage of the grown produce (local schools, markets, restaurants, charity)?

MAIN CHARACTERISTICS OF THE URBAN COMMUNITY GARDENS IN CEE

From a place perspective, urban agriculture can be intra-urban and peri-urban (Smith and Jehlička, 2013), depending on size of plots, starting from small-scale to large-scale. Household gardens and allotment gardens are distinguished mainly between home consumption based farming and gardening level which is characterized by more civil-society actors' involvement.

Urban community gardens in CEE vary depending on their size, structure and aims. In the peri-urban area around Warsaw there are 277 complexes of households and allotment gardens mostly in better urbanized districts. In Budapest urban gardens are mainly located in the outskirts and most of them act as allotment gardens 17 in total, with average size between 100-3000 m2 and many household gardens dominating the peri-urban areas[2]. Urban gardens in Prague are in the heart of the city on plots owned by the state as the example with "Prazelenina"[3] garden, but also outskirt gardens as "Kokoza"[4] exist too. Bratislava`s urban gardens are driven by young enthusiasts on small private-public plots supported by public funds and operating on average 600m2 parcels as the example of "Sasinkova 21"[5]. Zagreb`s urban gardens are have been expanding in the last few years. Currently 10 gardens on 20 000 m2 with over 2000 parcels are operating in the inner city as allotment gardens[6]. During the last few decades, new forms of gardening using high level social innovations, environmental friendly lifestyles and bottom-up approaches have been emerging; e.g. community supported agriculture, guerrilla gardening, local food chains and the Slow Food initiative. Some gardens have involved disadvantaged groups, unemployed youth, elder people with the aim to integrate them into the urban network and provide with a decent

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[2] http://kozossegikertek.hu/kertek/
[3] http://prazelenina.cz/
[4] http://www.kokoza.cz/
[5] http://www.mobilnezahrady.sk/sk/
[6] http://www.zagreb.hr/default.aspx?id=53165

livelihood. Some of them use the internet as a market tool for online fresh fruit and vegetable shopping, fruit boxes and home delivery.

In Warsaw the eco-farm "Cztery pory roku"[7] is a place created for children attending kindergarten and primary school aiming to lead nature education and learn about agriculture in a practical way. Also, a group of activists in Warsaw have established a vertical vegetable garden to form a place for social integration among local inhabitants and create a place to organize events connected with urban agriculture.

In Prague, "Prazelenina" offers gardening opportunity for anyone throughout the season. For a fee, participants are provided with a grow-bag, soil, water, a wooden pallet that the bag rests on, and access to the garden's events and a common area for socializing. "Kokoza" offers workshops, giving the people skills and know-how in gardening and employs people with disabilities, who make their collection route via special bikes.

Table 1. Function and uses of the urban gardens in CEE

City[8]	Function and uses													
	Intra-urban	Peri-urban	Household gardens	Allotment gardens	Institutional gardens	Mixed production	Specialized production	Culture and Environment	Leisure and recreation	Selling and market	Landscape and aesthetics	Additional c services	NGO Society	Locals led farming
WAR	x	x	x	x		x		x	x	x	x		x	x
PRG	x			x	x	x	x	x	x	x	x	x		x
BRT	x			x	x	x		x	x		x		x	x
BUD	x	x		x		x		x		x	x		x	x
ZGR	x	x	x	x	x	x	x	x	x		x			x

Source: Authors' own edition and research 2015

In Budapest, "Leonardo garden"[9] has 91 plots and about 1/3 of the garden is community area where public programs such us film screenings, children programs, yoga classes and music are organized throughout the spring and summer seasons. Visitors are welcome and organized tours are frequent.

In Zagreb allotment gardens are in rapid extension where mainly ageing people are producing vegetables for household consumption and food security. Also community gardens such as "Arena Center - Pop up garden" where education and social interactions are the main drivers of its diverse events. It creates environment for encouraging and motivate people for growing organic and healthy food[10].

EFFECTS AND IMPACTS ON COMMUNITY URBAN GARDENS IN CEE CAPITAL CITIES

In CEE capital cities urban gardens are grass roots initiatives of local inhabitants or activists. Urban gardens` main role is environmental function, and supporting recreation and leisure, but vegetables and plants are produced the local community as well. The CEE community gardens change the atmosphere in the neighborhoods; participants in such gardening projects often feel enriched by the possibility of working together constructively, building their community and in addition producing food and better living conditions.

Urban community gardening in CEE capitals will definitely develop the public space of the city; and strengthen social cohesion of local residents whether they are young enthusiasts or senior citizens, individuals or groups. Although, urban community gardens are effective aids of the urban fabric, since their non-profit nature CEE community gardens cannot operate without significant municipality supports.Our paper focused mainly on the social aspects of urban community gardens without an emphasis on the economic background of these urban objects. Elaboration of different business models for several types of urban gardens is a possible future research idea.

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Garden as an edible place in city landscape

Beata J. Gawryszewska[1]

***Abstract* – These text describes allotment gardens in city and suburbia in Poland, Lithuania, Latvia and Ukraine. Function and form of allotment gardens were changed from traditional allotment garden for factory workers family to shared, pop-up community vegetable beds. Allotment gardens in urban environment, retain the traditional character, front of the plot and path to the shelter is arranged with ornamental plants, rest part are vegetables and fruits, rarely small area of recreational lawn. The same list of plants characterises garden in cityscape and allotment or shared garden. The image of a place with collection of ornamental and edible plants becomes a signification of residential area, which means friendly, easy-to-live, reach environment.**
***Keywords* – allotment garden, edible garden, image of the garden.**

INTRODUCTION

During the research conducted in WULS Department of Landscape Art, in 1996-2013 I compared home gardens, allotment gardens at the block of flats, and traditional allotment gardens, which have their origins in XIX century allotments for workers. Each types of the garden, which accompanied residential areas, have had the same character, visible in their image – composition, functioning and edible plants grown there. Garden plots at multifamily buildings clearly differ from urban greenery, repeating layout of composition and list of plants charac-teristic for home garden. Coleen and Meesters [2009] say, that the smallest private garden near flat is not possible to replace by public space, even it is the best greenery. Image of private garden is always associated with beds of edible plants, especially vegetables and fruit shrubs. Gardeners grow the same plants in gardens near detached houses and in multifamily building sites. Garden such that is perceived as an optimal place for living, which combine cultivation of ornamental and edible plants.

MATERIALS AND METHODS

I analysed allotment garden complex and gardens at multifamily buildings sites in Warsaw. The settlement in Warsaw Żoliborz, built in 1925-54 was example of modernistic social settlement, inspired by the ideas of The Athens Charter. Wola Settlement was built in 50. of XXth, as a residential site for workers. Ursynów represented architecture of the late communist period, 70. and 80, XX c. Courtyards in tenement buildings from XIX/XX century in Warsaw Praga, representing neglected and deprived neighbourhood, were place, where social programs were realised and thanks to them community gardens were created. Jazdów Settlement, localised in the strict centre of the city of Warsaw, close to parliament building, was green space, with over a dozen small wooden cottages, built in 1945. When municipality of Warsaw decided to remove them NGO's, which represented interest of residents "took over" vacant houses, uniting grassroots cultural and educational initiatives, thus creating a unique park of participatory democracy initiatives. They created shared gardens, reminiscent of home gardens. Lithuanian examples included allotments around Vilnius, Latvian around Ryga, Ukrainian were small plots at blocks of flats in Kamianka near Lviv.

Figure 1. Glass house with growing tomatoes in allotment garden in Ryga suburbs (B.J. Gawryszewska).

The basic method was case study. Visual ethnography and photographs has been used also as a method in all studies to source information about the spatial configuration of the sites. Furthermore, free participant observation and ethnographic interviews have been applied in the form of spontaneous, informal conversations. Data about the genus and species of plants grown on the plots and the spatial structure of the garden was gathered by conducting a conventional inventory.

COMPOSITION AND FUNCTIONING OF A GARDEN

Function and form of allotment gardens were changed from traditional allotment garden for factory workers family to shared, pop-up community vegetable beds.

The previous research allowed to establish a structure common to all plots at detached houses (Gawryszewska, 2013). Garden space was divided into two compositionally different parts - the front decorative and representative part and the main garden with places for recreation and for growing edible plants. Traditionally in home garden ornamental plants were localised in front before entrance the house and utilitarian edible – behind the building.

Composition of old allotments for workers was subordinated to the cultivation of edible plants, with a small addition of ornamental, flowering plants in front.

Gardens such that we could meet in Eastern Europe, even in the second half of the XX century. These types of gardens were mostly vegetable planted and rectangular shaped. Nowadays traditional allotment garden changes into recreational, freehand drawn spaces for leisure. It was removed from centres of cities and moved to suburbs, where most of the plots are recreational, than less than half of the plot is

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designed to cultivate of edible plants and herbs.

Gardens in Latvia and Lithuania have similar composition and characterise similar process of changes.

Different cases we could find at blocks of flats. Small gardens under the windows at Żoliborz, Wola and Ursynów settlements, localised at front side of buildings (there are entrances and pedestrian paths), have character of front gardens, with majority of ornamental plants, shaped like Gertrude Jekylls' style English perennial beds, with low border, enabling them to be admired by passers-by. At the backside of the building, residents if they have a possibility arrange gardens similar to the "main" garden. There are beds of vegetables and fruit shrubs. Shared gardens in Praga and Jazdów have rectangular shaped beds of vegetables, glasshouses, small amount of ornamental plants are only in addition to main "edible image". Image of the vegetable garden seems a friendly place, community and togetherness.

Table 1. Ornamental (o) and edible (e) garden in Poland, Latvia, Lithuania and Ukraine, (-) means "no data" (B.J. Gawryszewska).

Type of allotment	Poland	Latvia	Lithuania	Ukraine
allotment gardens	oe	oe	oe	-
shared gardens	e	e	-	-
beds u. the window	oe	o	o	oe

COLOURFUL AND EDIBLE IMAGE

There are species of plants characteristic for the gardens, and never for the urban greenery. The image of the allotment garden in Eastern Europe invariably associated with the cultivation edible and medicinal plants. Presumably the first plants in home gardens were cooking and medicinal herbs, brought from natural landscape. Research over history of species of plants, grown in European gardens shows there is the same set of plants, often edible or medicinal and thanks to them, the image of the garden becomes recognizable in the city landscape. The same list of plants characterizes garden in cityscape, in suburbia and allotment or shared garden.

The image of a place with collection of ornamental and edible plants became a signification of residential area. First element of the image are the flowering plants, present near human settlements from centuries e.g.: roses, asters, sunflowers, lilac, peony, poppy, snapdragon, phlox, viola, and rosemary, sage, dill, cucumber, carrot, lettuce, pea, parsley, onion, bean. The second is a structure, consist of two different parts of garden, front and main garden. In Polish examples can be seen more ornamental than edible plants, especially in front gardens under the window at block of flats in Żoliborz and Ursynów. They have representative, ornamental character. Edible plants appears on the backside of building, if it exists. Allotment gardens in urban environment (both in Poland and Lithuania) retain the traditional character, front of the plot is arranged with ornamental plants, rest part are vegetables and fruits, with small area of lawn.

Figure 2. Edible garden with glasshouse at Jazdów Settle-ment near the house of Państwo Miasto NGO (B.J. Gawryszewska).

THE NEW-OLD LOOK OF SHARED GARDENS

Traditional garden in Poland, Lithuania, Latvia and Ukraine, both in the city and in the suburbs is the garden where on a par with ornamental plants residents grow edible plants. Garden full of traditional, edible plants became popular among city residents and NGOs. People try to remember traditional edible plants grown in contemporary gardens only as ornamental. A new generation of allotment gardeners is brought up in a democratic reality. For them allotment garden associates with grandmas' garden, friendly space of childhood. The essence of the garden reminds them not only the image of a rural garden, but a togetherness. The image of informal space, associated with the safety of living is image of edible plants garden, as have been shown in shared gardens near NGO's Jazdów houses, built as a manifesto of opposition against the monopolization and building up the space of the city. Thus garden secured not only food, than image of garden environment, as a substitute of living in the "generous" landscape.

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Introducing composting in a community

Joaquim Moura, Luis Armondi[1]

***Abstract* - The objective of this project is to reduce – through decentralized composting - the volume of organic waste sent to landfills by 30 small Brazilian municipalities located in a tourist area of outstanding biodiversity. Due to the environmental importance of the region, these municipalities make up the Mantiqueira Federal Environmental Protection Area (EPA) and must manage their waste strictly as required by Law. The project's pilot phase focuses on an area in the municipality of Resende, in Rio de Janeiro state, and the other 29 municipalities are kept informed of (and stimulated by) our initiatives through the internet. The technical solution for community composting is relatively easy; harder is to "dynamize" institutional partners to be more productive and daring to implement effective and urgent innovations. This project is being developed by a partnership that brings together teams from the Mantiqueira Federal EPA, the Resende Municipal Environmental Agency, local neighborhood and business associations (ACVM, Mauatur) and regional NGOs (ABIDES, Pró-Bem-Viver) volunteers.**
***Keywords* – community composting, organic waste reduction, institutional challenges**

INTRODUCTION

As in the rest of the world, in Brazil the generation of urban waste already seems unmanageable, degrading increasingly larger areas and causing rising costs for municipalities. To reverse this process, in 2009 the National Solid Waste Law was promulgated, which established rules to avoid increasing pollution. It included targets for the gradual reduction of recyclable and compostable wastes sent to landfill (see table).

Gradual reduction percentages of dry and organic waste going to landfill in southeastern Brazil	2015		2019		2023		2027		2031	
	Waste reduction goals demanded by National Law									
DRY / ORGANIC	30%	25%	37%	35%	42%	45%	45%	50%	50%	55%

Despite the law, most Brazilian municipalities are not technically or financially prepared to achieve these targets, especially with regard to compostable organic waste.

The predominant waste management model among Brazilian municipalities is to hire a company to collect the mixed urban waste and take it to asorting station, where they try to separate its organic portion for composting (Menina, 2014) - but the final product is always highly contaminated andimpracticable for food production.

Today only a few NGOs demonstrate the feasibility of community and decentralized organic waste management (Abreu, 2013), producing organic fertilizer, saving energy and public resources, and avoiding greenhouse gases emission.

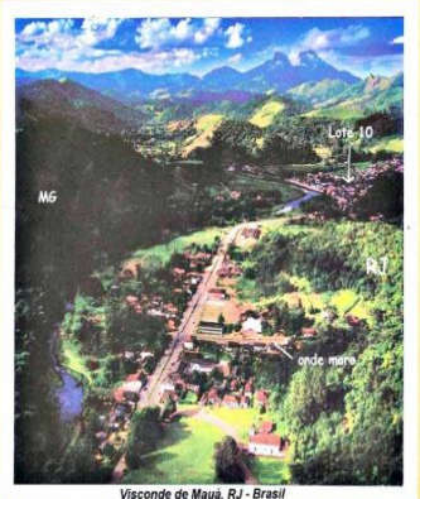
In Brazil, notable examples of NGOs working in this direction are the projects "The Buckets Revolution"[2] (community composting), and "Compost Sao Paulo"[3] (home worm-composting in boxes).

Our project[4] seeks to encourage "individual" and community composting in small open areas using wire mesh bin composters.

BACKGROUND

In April 2014 a technical team from the Mantiqueira Federal EPA decided to offer the 30 municipalities included in the region collaboration to achieve the goals set out in the new Law, focusing mainly on composting organic waste (about 50% of the total waste collected and usually neglected).

Ten municipalities confirmed their interest in this partnership with the EPA and local NGOs. Since then, action has been taken in a pilot area (the region of Visconde de Mauá, Resende RJ), where there are more experienced volunteers to help develop the project. The other municipalities can share their opinions and suggestions online and at periodic meetings, where they discuss adapting the pilot solutions to their own regions.



With its cold climate, waterfalls and pine forests, Maua is a famous tourist area, where nature is the main attraction.

The project focuses on two small local towns that total 3000 people, but on weekends this number can even triple.

Currently the county of Resende sends a truck to Mauá three times a week to collect the mixed garbage, and take it to the municipal landfill 50km away. The monthly regional total is around 90 metric tons, including 40 tons of organic waste.

PILOT PROJECT'S TARGET

Our target for the pilot area is to redirect 15% of the organic waste (from local businesses and homes) from the municipal landfill – by the end of 2015.

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Luis Armondi, agricultural engineer, environmental consultant, the project's main collaborator.
[2] agriculturaurbana.org.br/iniciativas/baldinhos.htm
[3] moradadafloresta.org.br/composta-sao-paulo
[4] amigosdemaua.net/projetos/GT-CONAPAM/resende

METHODOLOGY

The project features two aims: (a) to disseminate a practical, inexpensive system of decentralized composting, suitable for small open areas; and (b) to organize, with the local government, minimal support to residents and business owners to ensure the system's success and permit increasing its scale.

Equipment needed

Our system is based on two cylindrical compost bins made of welded wire mesh. While one bin receives fresh waste, other bin's older waste decomposes and becomes organic fertilizer. Every three months (average time for a family to fill a bin) the compost in the previously filled bin is ready for use.

The composter's size can range from 1m high and 0.8m in diameter, or bigger, depending on the waste produced.

To motivate residents, we prepared informative printed materials for distribution.

Disseminating the Project

The community was divided into two groups (business and residences), each with its own approach.

To address the businesses, which are mainly linked to tourism, we organized visits to all restaurants, inns and hotels in the area by a team of officers from Resende Municipal Environment Agency and representatives from local business associations.

During these visits, the team explained the importance of sustainable organic- waste management to the environment and the local economy.

The team showed them a photo album of waste problems and solutions, and handed out a leaflet with instructions on how to use wire mesh composters, and what fill them with.

With respect to the residents, the project enjoyed the support of the local neighborhood association.

Visits were made to homes with gardens, since we believe the owners would be more interested in producing their own fertilizer in loco.

Operation

Participants were instructed to fill the composter with raw vegetable scraps, such as peels, stems, leaves, and coffee grounds – always covered with dry materials (grass clippings, leaves, weeds, etc.) If the volume of waste produced is too large, and the composter fills too quickly, it can be made larger – or the system may include a third composter.

RESULTS AND CONCLUSIONS

Considering that only the local volunteers are actually disseminating the method, the more than 30 systems already set up in the region[5] demonstrate its feasibility. The main obstacle for the spreading of the local decentralized composting of organic waste in areas dominated by homes with yards is the low productivity of the municipal service, legally responsible for waste management and provided with the resources needed to do it.

Today, more than ever, and mainly for cultural, financial and institutional reasons, municipalities are reluctant to adopt unusual but more effective innovations. It is then up to the NGOs to research viable alternatives to our problems and encourage communities and government agencies to adopt them.

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[5] amigosdemaua.net/projetos/GT-CONAPAM/resende/composteiros_instalados.html

WG12 - Urban agriculture III: Effects of UA. Urban agriculture: a potential tool for local and global food security, economic, social and environmental resilience, and community health and wellness

Urban agriculture (UA), defined as the growing and consumption of food in and around cities, has been identified to have the potential to enhance individual and community health and wellness, increase local and global food security, strengthen city economies, reduce human impact on the environment, and promote a sense of community and self-determination. However, quantitative data supporting these claims are scarce. Community gardening has long been recognized to improve food security and dietary habits leading to increased vegetable intake and positive health outcomes. It has also been seen to promote social cohesion and a sense of community. More recently urban agriculture has been considered as a driver of local and global food security with a potential for meeting a significant portion of a city's vegetable and animal diet locally. Reports indicate that urban and periurban agriculture provides as much as 90 percent of leafy vegetables and 60 percent of milk sold in Dar es Salaam, Tanzania as well as 76 percent of vegetables in Shanghai and 85 percent in Beijing. In the United States, households met 40 percent of the nation's fresh vegetable demand during World War II. A recent scenario analysis has revealed that the City of Cleveland (Ohio, USA) has the capacity to achieve 22% to 100% self-reliance in fresh produce, honey, chicken, and shell eggs, preventing $29M to $115M in direct annual economic leakage. As a result, UA is also becoming a key land use in cities, such as for Chicago (USA) where up to 26.5ha are currently devoted to food production. While these data are encouraging, many claims of the benefits of urban agriculture still need to be substantiated.
We seek papers quantifying impacts of urban agriculture on all three pillars of sustainability: social (access to food, social cohesion, participation, health and wellness, etc.), ecological (GHG emission reduction, biodiversity, heat islands, waste recycling, storm water containment, etc.) and economic (number of jobs, income, innovation, place making, resource leakage prevention, etc.). Topics may include but are not limited to:

- *What role can modern urban agriculture, including building-integrated agriculture and vertical farming, play in reducing pressure on land and enhancing local and global food security?*
- *What is the extent of resource recovery from urban waste streams to meet the nutrient, water, and energy demands of growing urban agriculture?*
- *What are the quantifiable ecological benefits of urban agriculture? Does UA really reduce greenhouse gas emissions and/or increase biodiversity compared to the provision of food via conventional agriculture?*
- *What trade-offs are associated with urban agriculture? Detailed LCA analysis but also societal cost-benefit analysis studies or any other systematic approach to measure the impact of urban agriculture are welcome; impacts can be measurable or speculative.*
- *Economic and ecological benefits or social cohesion can be tackled by urban agriculture projects but also by other projects. We welcome studies that provide guidance for policy makers to inform a choice between different policy arrangements to reach the various goals attributed to urban agriculture projects. Also which theoretical concepts help to explain the effectiveness of urban agriculture projects, in comparison to other approaches to solve societal problems?*
- *It is often argued that if people grow their own food, they (and their children) also have more healthy eating habits and adopt a healthier life style in general. We welcome research to support these claims and we also want to see urban agriculture compared with more conventional public education programs aimed at healthy eating habits.*
- *How does the move to systematically monitor and evaluate the impacts of urban agriculture affect its character and operation, as a bottom-up self-organising urban activity? Which regime actors define what measures to quantify the impacts or urban agriculture and how does this further professionalise*

or actually impair urban agriculture's potential to bring about a more sustainable urban food provisioning?

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Europe-wide spotlights on Urban Agriculture's economic and other societal benefits

Bernd Pölling[1]

***Abstract* – Increasingly, society expects more from agriculture than solely producing food and other agrarian products. Social, cultural, environmental, landscape and ecological services and benefits are dominating discussions on UA's multifunctionality, while the economic contributions receive only little attention. UA's economy faces a knowledge gap, which is addressed in this survey by assessments of 90 interviews from Europe. Besides economic aspects, the survey incorporates also social, environmental and cultural heritage effects. Eight indicators deliver quantitative insights in UA's societal benefits. Urban farms are oriented towards profitability and competitiveness, which simultaneously create also additional societal benefits. High production values and the generation of jobs is characteristic for urban farms, but also urban gardening projects, which are primarily targeting social and ecological goals, have economic potentials by creating jobs and income on the individual but also on the macro city level. UA is part of and strengthens the urban economy by connecting the goals of productivity and profitability with additional societal services more pronounced than ordinary farming. Better knowledge on UA's societal benefits – including the economic impacts – should be acknowledged by urban policy makers and incorporated in land use decisions more seriously.**

***Keywords* – multifunctionality, economy, society, environment, cultural heritage, European survey.**

INTRODUCTION

Urban Agriculture (UA) is a "permanent and dynamic part of the urban socio-economic and ecological system, using typical urban resources, competing for land and water with other urban functions, influenced by urban policies and plans, and contributing to urban social and economic development" FAO, 2007). The production of food and other goods is as a matter of course most important, but the society increasingly expects also social, environmental and landscape services and benefits. The discourse on UA's multifunctionality strongly focuses on social, cultural, landscape and ecological issues, while the direct as well as implied economic contributions are widely absent in discussions on societal benefits in general. Qualitative as well as quantitative economic values of UA face a knowledge gap in public as well as in scientific discussions.

METHODOLOGY

This knowledge gap of UA's economic benefits is addressed here by assessments and case study examples of societal benefits from different European urban regions. The interview-based survey, which follows a standardized questionnaire scheme, was conducted in more than ten European countries. The in total 90 interviews include a wide range of UA's activities from community gardening to commercial high-value crop production and marketing. More precisely, it requests information and data on ordinal scale about production value, paid and non-paid jobs, educational and social activities, cultivated greenspaces, agro-biodiversity as well as cultural and natural heritage. These eight indicators belong to the four added values: economy, social, environment and cultural heritage (s. table 1).

Table 1. List of surveyed indicators addressing the economic, social, environmental and cultural heritage added values

Added values	Indicators
Economy	• Production value (€/a) • Full-time jobs
Social	• Non-paid jobs • Education services (person-hours/a) • Social services (person-hours/a)
Environment	• Cultivated greenspace (ha) • Agro-biodiversity (number of crops and livestock)
Cultural heritage	• Maintenance costs cultural / natural heritage (€)

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Economy

The economic relevance of UA is often a minor topic in interdisciplinary approaches on UA's multifunctionality, but the number of 200 million people estimated to globally work in UA with a commercial aim put the economic dimension on the agenda (FAO, 2007). Furthermore, about one third of the rain-fed and 60% of the irrigated cropland is located in and around cities (Thebo et al., 2014). These values underpin the need for a stronger emphasize on the direct and implied economic contributions of UA into both the agricultural sector, which is per se seeing itself as part of the rural, and the planning processes in agglomerations.

Many interviewed farms demonstrate the orientation on profitability and competitiveness, but - deliberately or casually – create also additional societal benefits. The turnover, profit and jobs are generated through a bunch of adjusted production systems, marketing concepts and provision of various ser vices, including recreation, social, education and other ones. Production values of more than half a million Euro and the provision of more than two - sometimes even more than ten – jobs is not unusual. Also urban gardening projects, which follow primarily non-profit, often social or ecological goals, have the potential to create jobs in gardening, administration, acquisition, etc. as interviewed topdown as well as bottom-up activities from different countries show.

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Society
Social functions are often stressed when talking about UA's societal benefits. Urban Agriculture yields various social added values by including a large number of types, which range from education and information, health, care farming to manifold recreation aspects, which can be both, pillars of the business model or non-remunerative side-effects of farming.

The conducted survey reveals that many commercial urban farms as well as urban gardening activities incorporate social and educational services into their work and business strategy. While in many urban gardening cases the social aspects are representing the main aim, it is one but often a minor business pillar of urban farms aiming to produce and market agrarian goods.

Environment
Open space functions are concentrating in urban areas on limited farmland and other greenspaces, like public parks. UA is a productive and multifunctional Green Infrastructure cultivating and managing large areas in and around cities (Thebo et al, 2014). It "is [also] part of the urban ecological system and can play an important role in the urban environment management system" (FAO, 2007). About half of the investigated cases cultivate resp. keep more than 30 different crop types and livestock races, while only a few do not reach five. The examples with rather low levels of agro-biodiversity are specialised farms, which focus on one or a few crops, like many wine growers, or greenhouse enterprises. UA in all its varieties benefits urban landscapes and provides additional biotope niches for flora and fauna.

Cultural heritage
The maintenance of cultural heritage is especially relevant for long-established farms, which changed over time from rural to urban environments through urban sprawl, and for new gardening projects, which highlight traditional land uses, old varieties and cultural history. Typical elements in agriculture are old, often no longer up-to-date buildings, traditional crop and animal varieties, old trees as well as historical land use systems. The survey reveals a focus of cultural heritage added values in Southern Europe.

DISCUSSION

UA is characterised both by its heterogeneity of involved actors, dimensions, backgrounds and objectives on the one hand and by its multifunctional external effects for the urban economy, society and environment on the other hand. In various ways urban farmers and persons engaged in bottom-up and top-down urban food gardening render societal benefits. UA is a part of and strengthens the urban economy. Already Mougeot (1999) distinguished UA from the rural counterpart by its integration not only in the urban society and environment, but also into the urban economy. Many of the investigated urban farms are defined by high economic values exceeding 500,000 € per year production value and providing several jobs, sometimes even more than ten. Furthermore, urban farms connect the goals of productivity and profitability with additional societal services more than 'ordinary agriculture'.

"Despite farm productivity and profitability, farmland has a lower market value than other land uses such as residential or commercial development. In order to retain farmland [in urban and metropolitan areas], the services it provides must be valued" (Brinkley, 2012). The range and values of UA's societal benefits should be acknowledged by urban policy makers and be incorporated in urban and periurban land use decisions more seriously.

CONCLUSION

The maintenance and further development of greenspaces with an economic, here agricultural, claim is more suitable than consuming limited public budgets for taking care of not productive greenspaces. In the past most emphasize was put on social and environmental as well as non-remunerative effects, but the direct and implied economic dimensions have to be considered more to perceive and foster UA as a productive, multifunctional and future-oriented business sector of the urban world. The dimensions and values of economic contributions, but also nonremunerated functions and benefits of UA on the European level can be well approached and visualised with the methodology of this paper.

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The Urban Agriculture, a New and Soft Solution for the Rurban Areas

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***Abstract* – The number of people living in urban areas is increasing dramatically. 50 per cent of the world population lived in urban areas in 2008, first time in the world history. This increased to 54 per cent in 2015. As urbanization proceeds, food insecurity issues in the cities are sure to increase. Urban agriculture could mitigate some of these food supply risks. Urban agriculture produces 15 to 20 per cent of the world's food supply and could play a major role in achieving global food security. Urban agriculture refers to the production of both food and non-food products in urban, peri-urban and rurban areas. In cities in developed countries, urban agriculture is limited by a lack of space and the absence of economic incentives; however, in the developing world, urban agriculture has considerable potential to improve food security. Urban agriculture is experiencing burgeoning popularity, with gardens springing up in many cities in Australia, Canada, the United States, England, France and New Zealand. Land plots to grow crops are diverse, including windowsills, rooftops, basements, walls, recreational grounds and roadsides. These gardens mostly operate as community gardens. Despite its growing popularity, urban agriculture feeds only a very small percentage of the population in these cities.**

***Keywords* – Urban Agriculture, Rurban, Urbanization, Rural, Urban Feeding.**

INTRODUCTION

Urbanization is one of the key drivers of change in the world today. From the 1950s to the present, the world has witnessed unprecedented urban growth. Population growth is therefore becoming largely an urban phenomenon concentrated in the developing world (Satterthwaite, 2007). The world's urban population currently stands at around 3.5 billion. It will almost double to more than 6 billion by 2050. By 2050 the UN estimates that the global population will reach 9.6 billion, with the majority of that growth taking place in urban areas of less developed regions (UN, 2012; 2013).

This is a challenge not only for urban areas but also for rural areas, because many people, especially the young, will migrate from rural areas to urban areas over this period (Polat & Gul, 2008; 2009).

What do we have to do to ensure people's access to good nutrition in cities? What do we have to do to produce enough food for urban dwellers? What infrastructures are needed and what kind of food production is possible in cities? How can cities preserve the services of the surrounding ecosystems? A very wide range of important issues links urbanization and food security.

Despite many technological and mechanical improvements in food production, hunger and malnutrition remain central issues as poverty continues to be prevalent in many cities around the world. Specifically, it is estimated that 40% of urban inhabitants are living on less than US$1 a day, while simultaneously 70% are living on US$2 a day (FAO, 2012). Similarly, impoverished urban households are estimated to spend 60–80 percent of incomes on food, making them more vulnerable to food price volatility (Cohen & Garrett, 2010).

Dwellers, which moving from rural to cities, often bring their agricultural practices with them for food security and livelihood reasons (Thys et al., 2005). This transformation of agriculture from a traditional rural industry to an urban and peri-urban phenomenon has led to significant displays of livelihood changes. There is not yet a universal definition on urban agriculture (UA) (Polat & Gul, 2009).

Over the past two decades urban agriculture has emerged as a strategy to foster the revitalization of distressed communities, support local economies, and provide increased local access to healthy food (Goldstein, et al., 2011). The growth of UA is also considered as a relatively new trend, although it has a long history in some cities (Bourque, 2000). Although recent European agricultural history assumed agriculture and city as separate and distinct entities because of the clear-cut division between urban and rural (Redwood, 2009), it has not been this way throughout the history.

URBAN-RURAL INTERFACE: RURBAN AND UA

The perceived link between the city and the countryside is evolving rapidly, shifting away from the assumptions of mainstream paradigms to new conceptual landscapes where rural-urban links are being redefined. In this conceptual field, the peri-urban interface is still generally considered as a transitional zone between city and countryside.

The fact that it is practiced in the urban environment gives UA unique characteristics and issues, which are considerably different from its rural counterpart. However, it has proved hard to delineate a firm spatial boundary to distinguish between what constitutes rural, peri-urban and urban agriculture. Such static boundaries would theoretically require clear, unproblematic ways of knowing where the 'city' stops and the 'country' starts. The reality of the complex relationships between urban and rural space make this a near impossible task.

Interactions between the urban and rural through the movement of people, money, ideas, food and natural effects are largely under-examined and at times unacknowledged (Lynch, 2005). Furthermore, the steady outward sprawl of traditionally urban activities can confuse understandings of urban and rural space when traditionally 'urban' activities are

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pushed further into the rural hinterlands of the city and vice versa.

In terms of location, the definition of UA is less problematic than its peri-urban counterpart (Mougeot, 2005). There is no officially agreed set of limits used to define the difference between the two, but criteria which have been used have included the level of rural or urban influence on a particular area, population densities or size, and city limits or municipal boundaries.

It is clear that UA incorporates a range of locations, activities, methods and purposes. This wide reach influences the complexity of the limitations faced and challenges posed for the future practice of UA. However, the broad scope of UA also contributes to the practice's usefulness as an appropriate strategy for more holistic and integrated solutions to urban development challenges.

CONCLUSIONS

UA produces 15 to 20 per cent of the world's food supply and could play a major role in achieving global food security. UA refers to the production of both food and non-food products in urban and peri-urban areas. The growth of UA is a result of a global increase in migration from rural to urban areas.

UA is experiencing burgeoning popularity, with gardens springing up in many cities in Australia, Canada, the United States, England, France and New Zealand. Land plots to grow crops are diverse, including windowsills, rooftops, basements, walls, recreational grounds and roadsides. These gardens mostly operate as community gardens.

Urban agriculture has an important potential in order to stop urbanization spreading to agricultural lands, to stop illegal settlements, to provide the use of thermal energy in coastal areas for agricultural aims and to provide the planning of settlements occurring by themselves in the city and desiring to continue their rural structure according to their own attributes.

Considering that no authority in Turkey is interested in non-formal agriculture, it is apparent that UA will have difficulties on issues such as discussion, participation, getting information and application. Especially in cities which have been planned by giving time and boundaries and whose regional location has been defined, how urban agriculture will enter the plan notes and who perform its control should be clarified.

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Food self-provisioning between tradition and alternative – lessons from allotment gardens in Brno, Czech Republic

Lucie Sovová[1]

***Abstract* – The presented paper deals with allotment gardens, trying to reintroduce this traditional kind of urban agriculture to the discussion on alternative food networks (AFNs), cities resilience and self-sufficiency. I present the results of a research carried out in three allotment sites in Brno, a city of 400 000. Using the method of consumer diaries, I try to quantify the amount of fruits and vegetables produced in the gardens and the level of self-sufficiency of respondents' households. These data are furthermore used to provide an educated guess about the potential of Brno gardens for the city's food self-sufficiency.**
***Keywords* – Allotment gardens, food self-provisioning, urban agriculture, urban gardening, quiet sustainability**

INTRODUCTION: PAST AND PRESENT OF CZECH GARDENERS

In the Czech Republic as well as other Central and Eastern European (CEE) countries, gardening and food self-provisioning experienced its peak in the modern history during the era of state socialism. Whereas some authors explain this phenomenon by market shortages in the planned economy (Alber and Kohler, 2008), others add limited hobby options, impossibility of travel and general lack of apolitical activities as other, possibly even more important factors that led both rural and urban dwellers to their gardens (Duffková, 2002; Jehlička and Smith, 2011).

This historical development contributed to the persistently high incidence of food self-provisioning. According to Smith and Jehlička's (2013) research, 43% of Czech households were producing some of their food in 2010, whereas this figure ranges around 10% of population in Western European countries (Alber and Kohler, 2008). On the other hand, the popularity of gardening in the socialist era casts a shadow on the current reputation of this practice among general public, policy makers and civic initiatives (Jehlička and Smith, 2011; Jehlička et al., 2012). We can observe that while West inspired alternative food networks (AFNs) such as community supported agriculture, organic food or (paradoxically) community gardens are gaining popularity and support, traditional and much more widespread practices are marginalized.

Urban allotments are an example of this development: they are generally perceived as outdated and obsolete and often face the threat of abolition due to high land competition. The production potential of the allotments is generally neglected or even dismissed as inefficient in comparison to market offer (Keyzlarová, 2012: 58; Valešová in Gibas et al., 2013: 108). What is more, food provisioning is rarely mentioned even by advocates of preservation of allotment gardens, whose arguments mostly revolve around their environmental benefits and social function (Buček, 2011; Keyzlarová, 2012). This gap between the recent rediscovery of urban agriculture as a contribution to sustainable food production and the already existing but virtually unexplored food provisioning activities in the allotments was the main motivation for the pre-sented research.

METHODS

The research was carried out in three allotment sites located at the Kraví hora hill in the centre of Brno. The core method used was consumer diaries: during six months (beginning of May – end of October 2014), 13 respondents recorded all the fruits and vegetables they harvested in their gardens and all the fruits and vegetables their households acquired otherwise (typically bought). The consumer diaries were designed to answer the main research question: How much fruit and vegetables do respondents grow in their gardens during the season and to which level does this amount cover the total consumption of fruit and vegetables in their households? The diaries also provided an overall image of respondents' consumer habits. Furthermore, I used semi-structured interviews and non-participant observation to explore the qualitative context of food production in the allotments.

FOOD PRODUCTION IN BRNO ALLOTMENT GARDENS

According to the data collected in consumer diaries, 13 respondents produced in total 1588 kg of fruits and vegetables during the season. One garden sized 200-250 m2 therefore yielded on average 122 kg of produce, although this figure differed by two orders among respondents. Gardens were a significant source of fruits and vegetables for respondents' households: 46% of the food registered in the consumer diaries originated from the allotments.

Four of the respondents grew more food than their households consumed. This reveals that the level of attainable self-sufficiency is determined not only by the garden productivity – the "supply" side – but also by the "demand", that is, gardeners' eating habits. It should also be noted that none of the respondents was aiming to achieve food self-sufficiency. Food growing did play a role in their motivations for gardening, but it was mainly connected to better taste and generally higher quality they attributed to their harvest compared to fruits and vegetables available in the market. These attitudes correspond to previous research (Focus, 2006; Smith and Jehlička 2013), where obtaining fresh and healthy food ranked as one of the most appreciated benefits of gardening. At the same time the interviews confirmed that gardening is

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perceived as a hobby and economic factors do not play a role in gardeners' motivations (Jehlička et al., 2012).

BRNO GARDENS FOR THE CITY'S SELF-SUFFICIENCY

The respondents reported using on average half of their gardens' area for food production. Together with the recorded amount of produce, this puts the average yield of the observed plots to 1,18 kg/m2.

The city of Brno has 1281,5 ha of garden areas (Ageris, 2006). Assuming that all garden owners would also dedicate half of their plot to food production and they would reach the same yield, they could produce approximately 30 242 tons of fruits and vegetables per year. The comparison of this production potential with the city's fruit and vegetable consumption leads to interesting results. Based on data on household food consumption in the region (Czech Statistical Office, 2014: Tab. 7d), Brno households annually consume 15 531 tons of fruits of temperate zone and 16 327 tons of vegetables. From this I conclude that the city could be, at least hypothetically, very close to self-sufficiency in these foods.

CONCLUSION

My research from Kraví hora shows traditional allotment gardens as a valid alternative to the conventional ways of food procurement. Nevertheless, the position of these gardens in the realm of alternative food networks is rather specific. By definition, AFNs are consciously aiming to develop alternatives to the conventional food system. Contrarily, environmental concerns, reflections on the current food system and desire for change are rare among Czech gardeners, as shown by previous research (Smith and Jehlička, 2013; Gibas et al., 2013) as well as my own inquiry. The lack of environmental awareness also reflects in respondents' behaviour – e.g. occasional use of agrochemicals in the gardens or mostly conventional shopping habits.

Smith and Jehlička capture this inconsistence between practice and its perception in their concept of quiet sustainability defined as "practices that result in beneficial environmental or social outcomes, that do not relate directly or indirectly to market transactions, and that are not represented by the practitioners as relating directly to environmental or sustainability goals." (2013: 155) Brno allotment gardens are an example of such a practice: they present non negligible spaces of local food production and contribute significantly to the users' food sovereignty and self-sufficiency without intending to do so. Although stemming from different his-torical and cultural context and driven by distinct set of motivations, the benefits of Czech allotments are, in conclusion, compatible with the aims of Western AFNs. Their potential for sustainable food production should be supported and possibly enhanced, e.g. by raising awareness on ecological gardening practices and the wider context of food production system. Bridging the gap between this traditional practice and the discourse of AFNs could broaden the gardeners' horizons as well as provide the allotments with new legitimacy.

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Healing garden or gardening? Data from the Perceived Restorativeness Scale

Costantina Righetto, Francesca Meneghello and Giorgio Prosdocimi Gianquinto[1]

***Abstract* – The recent development of the therapeutic garden "A garden to Relive", in Venice, at the San Camillo Neurorehabilitaion IRCCS Hospital, was an opportunity to evaluate its restorative potential among visitors. The aim of this project was to explore how the perceived restorative potential of the garden could change in relation to the frequency of the visits and to the activities carried out in the garden by patients, relatives and by the staff of the hospital. All of them were asked to complete a questionnaire, the Italian version of the Perceived Restorativeness Scale (PRS), focusing on their experience in the garden. The analysis showed that the different use of the garden results in a different restorative potential. Specifically, the restorative potential was significantly higher in people regularly engaged in the activities of horticulture and gardening in comparison to the other two groups.**

***Keywords* – Therapeutic garden, restorativeness, garden therapy, horticultural therapy, healing garden.**

INTRODUCTION

The Attention Restauration Theory (Kaplan and Kaplan, 1995) asserts that people can concentrate better after spending time in nature or looking at natural landscapes and it can be of support to develop a measurement system of the regenerative capacity of an environment. The Perceived Restorativeness Scale (PRS) (Hartig et al., 1997) is a scale developed for this purpose and to connect theoretical with experimental results. Pasini et al. (2009) demonstrated that an Italian version of PRS is reliable and able to discriminate between the four environmental properties indicated by Kaplan & Kaplan (1995): fascination, being away, extents and compatibility. Higher scores in the PRS mean higher regenerative potential. The aim of this work was to evaluate the regenerative capacity of the Therapeutic Garden of the San Camillo Neurorehabilitation IRCCS Hospital in Venice, in relation to the kind of activity carried out by the people involved. The therapeutic garden is located in a wooded park, has large driveways and specific paving; there are ergonomic raised beds with a height suitable to every wheel-chair user; a green-house to enable working in every season and, above all, an accurate selection of plants for organic cultivation, with a wide biodiversity. The question was: is there any difference in the regenerative potential of the garden between people walking in the garden, people engaged in horticultural and gardening activities and people who know the existence of the garden, work nearby and sometimes look at it but who don't regularly attend the garden?

METHODS

To evaluate the regenerative capacity of the garden, the Italian version survey of PRS was used (Dentamaro et al., 2011). It includes eight questions with two items for each regenerative factor, which can allow to explain how a person is experiencing the environment. It requires four-five minutes to fill it out. Three different kinds of users of the garden were surveyed (Table 1). 98 people replied to the PRS questionnaire distributed among patients, caregivers, hospital employees and among people engaged in the activities of horticulture and gardening. We then subdivided participants into three groups: people walking in the garden; people working in the garden and people looking at the garden, without regularly attending it.

Table 1. Interviewed participants and activities carried out in the therapeutic garden.

Activity	Number	Caregivers	Hospital employees	Patients
Working	34	4	1	29
Walking	27	12	2	13
Not regularly attending the garden	37	15	14	8

The restorative potential was obtained from the average of the eight answers related to the four regenerative factors (Berto, 2005; Ivarsson & Hagerhall, 2008). Collected data were analysed using ANOVA and Chi-square Test.

RESULTS

The analysis of the components of the restorative effect of the therapeutic garden made with ANOVA, resulted in a significant distribution between the four restorative factors and the kind of activity performed in the garden. The restorativeness capability of the garden (REST) has been calculated on the average of the eight answers related to the four restorative factors (being away, fascination, extent and compatibility). It was higher and significant for those who were regularly engaged in horticulture and gardening activities in comparison to people only walking in the garden and to people only looking occasionally at the garden (Fig. 1; Fig. 2).

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Figure 1. Levels of restorativeness in people that took advantage of the garden into 3 different ways. Restorativeness resulted higher for people that worked in the garden. (Chi square Test)

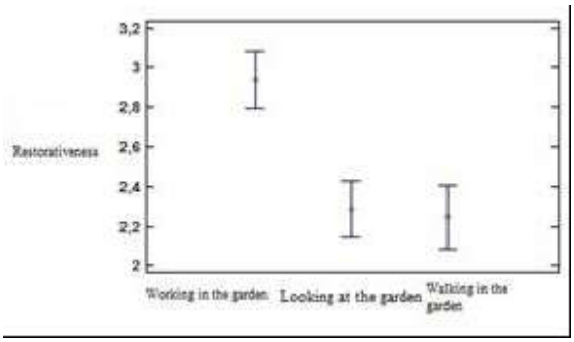

Figure 2. Average of restorativeness for the different activi-ties (Anova)

CONCLUSIONS

The aim of this work was to analyse the regenerative potential of a therapeutic garden, in relation to the activities performed by its users. To reach this objective, the Italian version of the PRS (Perceived Restorativeness Scale) was administered to different kinds of users. Results suggest that between the acts of walking in a garden or working in a garden or just looking at it, there is a consequence in the regenerative capacity, i.e. the restorativeness (REST), that the garden can provide. Despite some methodological limitations, in this study, the assumption according to which the direct contact with the plants offers the possibility of a greater regeneration was confirmed. Working with plants can give people a regenerative power greater than the simple walking in the garden or admiring it from a window. It could be assumed that working with plants would open in the best way a kind of a deeper connection with nature that is so essential to receive psychological and physiological benefits (Kaplan & Kaplan, 1990; Lee, 2010; Palsdottir et al., 2014). This study can be compared with the results of few other studies in which the effects on the restorativeness of the carried out activities resulted significant. For example, Hansmann et al., (2007) demonstrated that practicing a sport produces more regenerative effects than other activities like strolling, relaxing or observing nature. This is a pilot study, with a limited number of interviews and further considerations are needed for the comprehension of the processes that regulate the benefits of horticultural and gardening activities in the health system. Providing regenerative indica-tions for the destination of the green spaces in the hospitals, not only as "passive" healing gardens but also as places for green exercise and for gardening opportunities, will improve the well-being of patients, relatives, caregivers, visitors and employees.

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Sustainable urban agriculture in Quito, Ecuador

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Abstract **– The research focused on determining sustainability levels and the importance of urban agriculture on people's life. Economic, environmental, sociocultural and technological factors encourage urban dwellers to practice organic agriculture based on agroecological principles. The research involved eighty-two people of three organizations dedicated to urban agriculture in the Metropolitan District of Quito (DMQ). The researchers calculated a General Sustainability Index for gardens of each participating organization. Although in different levels, all analyzed gardens met the basic requirements of sustainable. Other independent variables also showed an improvement in the organization and social participation, in particular with regard to women, as well as the development of local capacities, alluding to the importance of human capital over economic capital. According to the categories utilized by the index, the most important benefits of urban agriculture were fairness in production and food distribution, distribution of opportunities within families and communities, access to the required resources for food production and access to financial support and focused policies. The study concluded that urban agriculture in the DMQ represents an option for a better life; it protects and supports marginalized social groups that keep interest, ability and hope in this alternative.**

Keywords **– Urban Agriculture, Sustainability, Agroecology.**

INTRODUCTION

The practice of farming in and around cities is not new. Agriculture, always considered as a revolution, has been a normal part of the activities carried out in cities. Cities and agriculture descend from the same line and play a fundamental role in historical and current processes of humanity (Clavijo, 2013).

Nowadays agriculture and cities melt in a single moment, generating important movements around the globe. Urban and Peri-urban agriculture (UPA) has always existed and will exist, providing food to a growing population. UPA can contribute to food access, food security and the reinvention of cities with different styles of agricultural practices (Clavijo, 2013). UPA emerges as an effective strategy to access fresh, nutritious and healthy food for the family and the community. In general, people who practice this type of agriculture are low-income urban population who are trying to meet basic food needs food by growing in available small plots of land (Cabannes and Mougeot, 1999). UPA experiences tend to be decentralized, diverse and smallscale, a vision which contrasts with extensive production practices of modern agribusiness (Clavijo, 2013).

In Quito, as in many other cities, since 2000 the idea of an economically and environmental sustainable UPA has gained strength as a promising strategy for addressing a number of pressing concerns: food access, poverty alleviation, social inclusion, urban biodiversity and environmental degradation, employment and business. In the DMQ AGRUPAR (DMQ program), INTI Strategy (Ministry of Agriculture's project), and PROBIO (Ecuadorian Organization) have been some of the most influential initiatives. In the year 2012, when this study was conducted, the DMQ had registered over 793 gardens among these initiatives. Our objective was to determine the degree of sustainability of the gardens supported by these initiatives.

METHODOLOGY

The sustainability of urban and peri-urban ecosystems was measured in 82 gardens from the AGRUPAR, INTI Strategy, and PROBIO projects as well from four independent owned gardens. Drawing on Sarandon et al. (2006) and Sarandon (2009) and Blixen et al. (2007), the survey assessed 25 indicators in four dimensions: socio-cultural, economic, environmental and technological (table 1).

Obtained results (numerical, surface, time and monetary value) were transformed to a scale from 0 to 4, where 0 represented less sustainability and 4 represented the greater sustainability and 2 the sustainability threshold. The sustainability index for each dimension was obtained by averaging the indicators presented in each dimension. The average of the four dimensions represented the General Index of Sustainability (GIS).

RESULTS

Results shows that 82 gardens proved to be sustainable in every dimension and in overall, with a GIS of 3.14 (table 2). Nevertheless, it appears the INTI project is just over the sustainability threshold. Meanwhile, we found high indices for PROBIO, AGRUPAR and independent gardens.

DISCUSSION

The more homogeneous data belongs to PROBIO. All dimensions exceed the sustainability threshold with the lowest value in the Socio-cultural dimension, 3.13 and the greatest of 3.92 on the technological dimension.

Table 1. Indicators for assessing the sustainability in agroecological urban and peri-urban gardens

Dimensions	Categories	*Indicators*
Economic	Food	*Diversification of products*
		Surface of production for self-consumptions
	Income	*Monthly income by group*
		Monthly spending per group
	Economic risk	*Diversification for sale*
		Marketing channels

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Environmental	Conservation of soil	*Management of vegetation cover*
		Rotation of crops
		Crop diversification
	Risk of erosion	*Predominant slope*
		Plant coverage
		Orientation of rows andbeds
	Management of biodiversity	*Temporary biodiversity*
		Spatial biodiversity
Socio-cultural	Satisfaction of basic needs	*Housing*
		Access to education
		Access to health
	Acceptability of the production system	*Personal acceptability*
		Cultural acceptability
	Social integration with the community	*Degrees of involvement*
	Knowledge and ecological consciousness	*Agro-ecological knowledge*
		Traditional knowledge
Technological	Management of production knowledge	*Degree of incorporation of organic technology*
		Cultural adaptability

Based in Sarandon et al. (2006); Blixen et al. (2007); Sarandon (2009).

Analogous results were obtained by AGRUPAR where the economic dimension had the lowest value, 2.8 and the technological dimension maintains the highest value, 3.8. Reflecting the more regular technical support that participating farmers receive from PROBIO and AGRUPAR. In both cases, the sociocultural and environmental areas have very similar values for socio-cultural and environmental dimensions. In general, the values of the four dimensions in these two organizations are not very different, which indicates stability in time, gardens and farmers.

Table 2. Index of sustainability of urban gardens in Quito

Organisation	AGRUPAR 69 gardens	INTI 5 gardens	PROBIO 4 gardens	Independent 4 gardens	Total 82 gardens
Dimension					
Economic	2.8	1.4	3.3	1.9	2.67
Environmental	3.0	2.2	3.2	3.1	3.04
Socio-cultural	3.1	2.7	3.1	3.6	3.13
Technological	3.8	2.1	3.9	3.7	3.73
GSI	3.2	2.1	3.4	3.1	3.14

Meanwhile, the INTI strategy terminated its garden project and the participant families generally did not continue with the activity. In addition, the objectives of this strategy were not marketing products, but to generate food access and reduce levels of chronic malnutrition in urban areas. For this reason, the economic area is lower than the rest. The same result was found for the independent gardens, since most of them belonged to schools; they prioritized on education over the sale of produce.

CONCLUSIONS

Urban agriculture in Quito represents a way of life that protects and provides a livelihood for many social groups from a marginalized majority, where many actors agree on interest, ability and hope. Beyond this situation and with a population eager to continue this activity, it should support the generation of public policies. In this way the urban farmer becomes an actor with legal capacity and consequently with privileges, duties, and obligations conferred by this status.

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Non-market food provisioning via home gardens and communal sharing in *Satoyama* production landscapes, Japan

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***Abstract* – A quantitative understanding of relations between ecosystems and human well-being is critical to local societies. Socio-ecological production landscapes are often characterized by sharing of provisioning services within and beyond communities. To quantify the quantity and varieties of non-market food consumed per household and to discover how food is shared in social relations and how they contribute to human well-being, we conducted webquestionnaire survey throughout Japan and in-depth face-to-face interviews in Noto Peninsula. In webquestionnaire survey, we found that (1) urban households consume smaller quantities of food grown at home and/or received from others than rural households, (2) social connections relating to use of natural resources was also weaker in urban area and (3) households in rural area primarily have such a social connection within their communities. In interviews we found that (4) the varieties and quantities of nonmarket food correlated positively with the number of sharing partners and (5) among semi-urban households, social connections beyond their communities, especially connections to rural communities, enhanced their non-market food consumption. Our results indicate that non-market provisioning of food enhances human nutrition and social relations.**

***Keywords* – Home garden, self-consumption, selfsufficiency, social capital, non-market transactions, Satoum**

INTRODUCTION

Since the publication of the Millennium Ecosystem Assessment (MA 2005), the concept of ecosystem services has become important because of its linkages to human well-being. MA (2005) acknowledged that ecosystem services are linked to security, materials fundamental to a good life, and health and that they are weakly linked to good social relations. On the other hand, the sociological literature reports that social capital—networks, norms, and trust that facilitate mutually beneficial coordination and cooperation—is considerably associated with the sustainable use of natural capital (e.g. Buchmann 2009). The importance of social capital is becoming more evident in a conceptual framework of the IPBES (Diaz et al. 2015) and is assumed as "enabling assets" for sustainable use of ecosystem services and development (UNU-IHDP and UNEP 2014).

Food provisioning is one of the vital ecosystem services for human well-being. Interest in strengthening local food production to mitigate global food instability is growing, and more attention has fallen upon home gardens (UN 2014). Home-based agriculture often involves sharing agricultural products with relatives, neighbors, and friends within and beyond the community. In a viewpoint of socioeconomics, sharing natural resources outside market transactions has been playing an essential role for building a social capital (STWR 2014). However, relations between food provisioning and social integration have not been studied quantitatively, especially in temperate regions and developed countries.

The aim of this study is to quantify the quantity and varieties of non-market food consumed per household and to discover how food is shared in social relations and how they contribute to human well-being.

MATERIALS AND METHODS

This study was conducted in two parts. First, we conducted web-questionnaire survey over 1,500 samples throughout Japan to understand a general trend of non-market food consumption and social links associated with use of natural resources in municipal level. According to the Ministry of Agriculture, Forestry and Fisheries, Japan, municipalities are classified into 4 types (mountainous agricultural, intermediate agricultural, flatland agricultural, and urbanized municipality) mainly based on the proportion of forest, cultivated area and population to the total land area.

Secondly, in-depth face-to-face interviews in three communities with varying socio-geographic attributes were conducted in Noto Peninsula which has maintained traditional, well-managed Japanese agricultural landscapes and seascapes (Satoyama and Satoumi). Assisted by local coordinators, we randomly selected 30 households in each of communities (inland, coastal and semi-urban community) and asked respondents about their food-sharing relationships.

To analyze the effect of municipality or community characteristics on the non-market food consumption (variety and quantity) and social capital, we used generalized liner model with R software. The model's explanatory variables included mainly municipality or community of residence, age, occupation, years of residence, and number of housemates.

RESULTS

In the web-questionnaire survey, we asked respondents about the variety and relative quantities (proportions) of each category (rice, vegetables, fruits)

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acquired outside market transactions during a year. For each category, we asked respondents about the quantities of food (a) grown at home (%); (b) received from neighbors, relatives, or friends through sharing (%); and (c) purchased from markets (%). The sum of (a) and (b) is the quantity of non-market food consumed. We found that households in urbanized municipality consume smaller quantities of food grown at home and/or received from others than households in agricultural municipality in most of the categories (result of vegetables is shown in Figure 1). In terms of social links associated with non-market food consumption, only 18% of respondents in urbanized municipality (n=406) knew anyone who grows food for self-consumption, while 29, 27 and 28% of respondents in agricultural municipalities (n=396 in mountainous, n=393 in intermediate and n=330 in flatland municipality, respectively) knew such person. We also found that households in agricultural municipality primarily have such a social connection within their communities

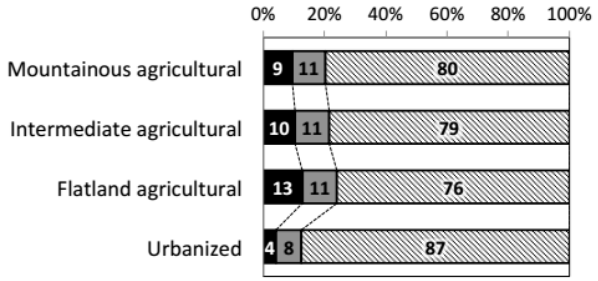

Figure 1. Comparison of the ratio of vegetable quantities among households in four different municipality types throughout Japan. Black, gray, and slashed columns indicate food grown at home, food received from others, and market purchases, respectively.

In the interview survey in Noto Peninsula, we asked respondents about non-market food consumption in the same way as web-questionnaire survey and about their food-sharing relationships and partners' residences. We found that the numbers of sharing partners correlate positively with variety in vegetables (Figure 2a) and also with quantity ratios of non-market rice, vegetables (Figure 2b), and fruits consumed. In other words, households with more sharing partners generally consume more nonmarket food. Finally, we analyzed the composition of sharing partners based on residence locations. Rural inland and coastal community households have more partners within their communities but fewer within their municipalities and prefectures than do households in semi-urban communities. This result for semi-urban communities suggests that extracommunity social connections, especially connections to rural communities, may contribute to food consumption qualitatively and quantitatively.

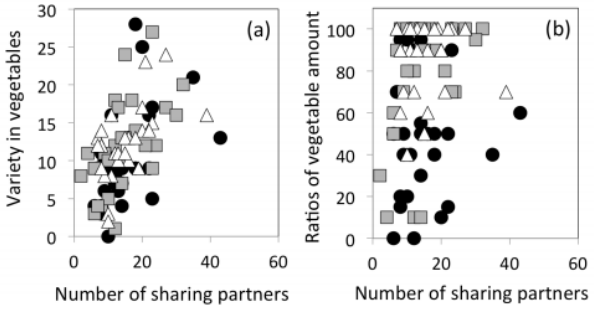

Figure 2. (a) Relation between varieties in vegetables of non-market foods and the number of sharing partners and (b) relation between the ratio of non-market vegetables consumed (sum of home production and received from others) and the number of sharing partners. Open triangles, gray-filled squares, and black circles indicate rural inland, coastal and semi-urban community.

DISCUSSION AND CONCLUSION

Our results demonstrate that the quantity of nonmarket food consumption was higher in households in rural municipalities compared with that in urbanized municipalities in Japan and that networks connecting rural and urban households enhance food provisioning qualitatively and quantitatively. Therefore, we conclude that non-market provisioning of food grown at home and/or shared with others enhances human nutrition and social relations. However, urbanization has weakened these personal connections and sharing mechanisms. Balancing market and non-market food provisioning and connecting rural and urban areas will be key to building localized models of sustainable societies. A further understanding of how food sharing relates to the multilayered social capital and how socio-ecological attributes influence its structure is needed.

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Motivations and environmental practices of urban gardeners – the cases of Ljubljana, London and Milan

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***Abstract* – In this paper, the phenomenon of urban gardening is observed both from a sociological and an environmental perspective. The analysis focuses on motivations and environmental practices of different groups of urban gardeners in Ljubljana, London and Milan: home food gardeners and allotment gardeners in public and private plots.**
***Keywords* – gardeners, socio-economic characteristics, motivation, environmental behaviour, quiet sustainability.**

INTRODUCTION

Urban gardens are found in many places around the world and are also very popular in Europe. Although this phenomenon is not new, its practices and impacts are receiving great attention from the media as well as from policy makers and experts from various scientific disciplines. The literature review (Guitart et al 2012) reveals that so far urban gardening has been receiving much more attention from social sciences than from natural sciences. Moreover, comparatives studies of urban gardening in various social contexts, especially the internationally aimed, are lacking. Some rare studies as that of Alber and Kohler (2008), based on the European Quality of Life Survey (2003), compared the amount of informal self-food provisioning in old and new EU member states. Their study revealed that in majority of Western EU member states the proportion of population growing their own food only rarely exceeds 10% whereas between 35 and 60% of the population in CEE countries grow some of their own food. On the basis of this evidence they assumed that informal self-food provisioning (where also urban gardening play a role) in the EU member states with the longer market economy tradition has a hobby character, while in the EU member states with the legacy of socialism this activity has the character of coping strategy of the poor. The study of Smith and Jehlička (2013) investigating the motivations and practices of growing own food in Poland and the Czech Republic contradicts to abovementioned assumption. They argue that the main motivation of growing own food in observed two countries is not poverty and scarcity of food supply, but provision of fresh and "healthy food", hobby and social benefits practised by a significant proportion of the population across all social groups without "encouragements" of political programmes or declarations. This empirical finding has led them to develop the concept of quiet sustainability, a notion characterised as a culture of sharing, repairing, gifting and bartering. The aim of our contribution is to compare the extent of occurrence of this culture in the three European cities Ljubljana, London and Milan embedded with different socio-historical contexts, as well as to verify the Alber and Kohler assumption about hobby/coping strategy character of urban gardening in these three cities.

METHODS

The data in this paper were obtained from a case study, which included also a short survey, carried out in 2014 within the framework of the international project FOODMETRES (7th Framework Project, subsidised by the European Commission). The sample of the survey consists of 127 gardeners from Ljubljana, 42 from London, and 42 from Milan. The analysis focuses on motivations and environmental practices of different groups of urban gardeners: home food gardeners and allotment gardeners situated in public and private plots.

In the following data presentation a descriptive statistical analysis is used.

FINDINGS

Collected data reveal that **various groups of people are engaged in gardening in the three cities**. Women strongly outnumber their male counter-parts in Ljubljana and London while in Milan the opposite holds true. The average age of urban gardener (UG) is 46 in London while in Ljubljana and Milan it is 58 and 65. Among UG higher educated persons prevail in Ljubljana and London but in Milan the great majority achieved secondary education. While gardening is mainly the activity of retired persons in Ljubljana and in Milan in London it is occupied chiefly by employed and self-employed persons. Furthermore, UG belong slightly more often to lower income groups in London than this is the case in Ljubljana and Milan. Regardless of sociodemographic differences among the subsamples the share of gardeners' household budget

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earmarked to food supply is much the same in all three cities (200-400 €).

Although some differences among UG in all three cities are observed (Graph 1), as regards to the **motives of gardening** the data shows that growing own food is predominantly oriented to fulfil quality nutritious, socio - psychological and environmental needs and in minor extend to economic or material needs. The data on the impact of growing own food also corroborate the strong social and environmental orientation of gardeners in all three cities as great majority of them strongly agree that "urban gardening strengthens the integration of people in the community", "growers create better interpersonal relationships" and "urban gardeners with using less transport contribute to the clean air". The minor economic or material motivations of gardening are further corroborated with the amount of needs covered by this production. Majority of growers (particularly the Londoners) cover fewer than 50% of their households needs for vegetables. Furthermore, many UG (70% in Ljubljana and 50% in Milano and London) **donate their surpluses and exchange seeds and seedlings** (around 50% of UG in all three cities).

The UG are working in rather different environments. In Milan the great majority (90%) of UG cultivate plots on public land away from their homes, while in other two cities the allocations of plots are more varied: 40-50% of them pertain to home gardens, while plots on private land represent 25% in Ljubljana but only 10% in London. But, 14% of Londoners grow their own food using "atypical" locations (e.g. terraces, balconies, windows, etc.) while in Ljubljana the corresponding share is 1%. As regards to **the size of the growing area** in London UG have at their disposal much larger plots than UG in Ljubljana and Milan. However, on average UG in London spend less their time for gardening than UG in other two cities. The UG in Milan and London have greater **access to tap water** than the ones in Ljubljana who in greater share needs to rely on other resources (e.g. nearby rivulets). As well, **collecting rain water** is not usual practice in Milan whereas it is rather common practice in London and Ljubljana.

So called **environmentally friendly way of gardening** in its varied forms (organic, permaculture, biodynamic) is the most frequently practised in all three cities. However, taking into account the type of fertilisers used significant differences exists between Ljubljana and London where UG are more frequent users of homemade compost in comparison to Milan where UG are more frequent users of the manure. **Skills and knowledge** UG already have or are gaining through the time also varies among the subsamples. While UG in Milan mainly rely on the knowledge received from their family members the UG in London and Ljubljana are acquiring their knowledge and skills mainly from books, magazines and personal observations.

Graph 1: Motivations for gardening

CONCLUSION FINDINGS

The results pertaining to motivations and social impacts of growing own food among various socioeconomic groups in Ljubljana, London and Milan confirm the predominantly non-profit, or hobby, nature of urban gardening. The unprofitable nature of urban gardening in all three cities is also mirrored through the analysis of environmental practices, particularly in the case of allotment gardeners growing their own food that champion organic production methods in relatively small-scale growing conditions with limited access to natural resource (e.g. water). In that way these results similarly as the research of Smith and Jehlička question the assumption of Albert and Kohler on significantly different character of self-food provisioning in different (Western, Southern and Eastern) parts of Europe as far as urban gardening is considered. Results on motivations, environmental practices and handling with surpluses (frequency of donations) strongly support also the thesis of "quiet sustainability" of UG food selfprovisioning.

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Food Production in a highly urbanized environment: the case of Singapore

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Abstract **– With almost 4.9 billion people projected to live in urban areas by 2030 and Asia accounting for 2.7 billion people, countries in the Asia-Pacific region are now tackling the problem of rapid urbanization. In Singapore, the role of agriculture has been on a steady decline the last 50 years. With almost 20% of land dedicated to farming in the 1960s, Singapore currently only hasless than 1% of its landused for food production. This is evident in how Singapore has been planned, with farmland being converted to other uses to cope with the increase in population. Climate change and food security are critical issues that affect not only food-producing countries but also those that are reliant on food imports such as Singapore. This paper will explore the history of Singapore's food production, from the Japanese occupation in the 1940s, to modern-day food production. Singapore food demand will also be detailed to understand how much food is being consumed and produced locally. Traditional farming areas and building-integrated farming will also be explored to understand the potential of these places, as Singapore has limited land resources allocated for food production. High-technology ways of cultivation to increase yield and reduce resources for farmingwill be discussed in urban agriculture such as hydroponics, aeroponics, the A-Go Grovertical farming system, as well asLED farming. Non-traditional farming systems that are uncommon in Singapore such as agroforestry systems and edible landscapes as a way of utilising existing passive greenery for food production will also be considered.**

Keywords **– Food Production, Resilience, Self-sufficiency, Singapore, Urban Agriculture**

INTRODUCTION

In a time of climate change, food security will become an increasingly challenging task to maintain in Asia, and more so in densely populated countries such asSingapore, the world's most densely populated country. Climate change is likely to result in more severe weather conditions that may impact the food supply chain, particularly with major food wheat exporters such as Australia and China having experienced extreme weather such as droughts and floods (World Bank 2011). It is estimated that an increase of approximately 3□ Celsius can potentially result in a surge of food prices by nearly 40% (Schuman 2011). With Singapore currently importing 90% of its food demand, it is likely that Singapore will be subjected to fluctuations in price and supply in the future (Harris 2009).

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1.1 History of Singapore's food production

Historically speaking, Singapore has never experienced catastrophic incidents that required its people to grow food crops for self-sufficiency and survival, apart from the Japanese Occupation of Malaya in 1942□1945. In the 1950s and 1960s, vegetables, fruits, poultry, and pig farms could be found in many parts of Singapore. Many citizens were engaged in agricultural activities until they were resettled into HDB estates (Remember SG 2014). Subsequently, farms were slowly phased out and agrotechnology parks were formed in the 1980s where most of Singapore's local food production currentlytakes place.

1.1.2 Food production in Singapore 1960s–1990s

Singapore was much more self-sufficient in terms of domestic demand in the past. In the 1960s, there was growth in vegetable, fruit, poultry, and pig farms in Lim Chu Kang, Punggol, and Orchard Road. Singapore was somewhat self-sufficient in terms of food, with self-sufficiency rates of eggs and pork being 100% (Lim 2009). Self-sufficiency rates of other food groups such as fish, vegetables, and chicken were at 30, 26 and 80%, respectively. Owing to rapid urbanization, the total number and area of farms were reduced from 17,663 farms and 13,010 hectares of farmland making up 18% of the total land area in the 1970s to 11,604 farms with an area of 8,093 hectare occupying 8% of total land area in the 1980s (Shim 1987). The government then had decided that it was more economical to import frozen and live pigs than to spend more on waste treatment of pigs. In the 1990s, only 2% of the land area was farmland as indicated in Figure 1

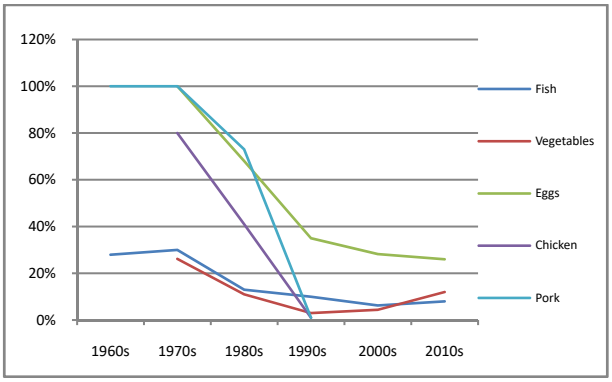

Figure 1: Self-sufficiency in terms of food production in Singapore.Source: Local food production (AVA 2014; Lim 2009; Shim 1987)

whileself-sufficiency of vegetables and eggs fell to 3 and 35%, respectively (Shim 1987). In the 1990s, farmland area fell even lower to 1.2% with no self-sufficiency in livestock (Shim 1987).

In present day Singapore, only 1% of its landuse is allocated for agriculture, and this is limited to poultry, eggs, fish, and vegetables (AVA 2014). Most of its food demand is met by importing from countries such as Malaysia, Brazil, Indonesia, Australia, and Thailand as seen in Singapore imports most of its eggs and vegetables from its neighbouring country — Malaysia, beef and mutton from Australia, chicken and pork from Brazil (Ghosh 2013). Despite importing 90% of its food, Singapore is still ranked 5th in 2014, up from 16th place in 2013 in the world and the most secure in Asia in terms of the global food security index (Heng 2014).

METHODS

To study the potential of food production in a highly urbanized environment like Singapore, existing available urban spaces were used to extrapolate the demand that can be met with high-yield leafy and root vegetables. For the purpose of this short paper, only the results of self-sufficiency that can be achieved with growing on roof top spaces will be shown.

RESULTS AND FINDINGS

According to the Agri-Food & Veterinary Authority of Singapore (AVA), Singaporeans consumed 247,731 tonnes of rice and 536,519 tonnes of vegetables. Of the 536,519 tonnes of vegetables, 80,544 tonnes were leafy and 445,507 tonnes were made up of other vegetable types (AVA 2014). If the entire 880 hectares of HDB public housing building rooftopsis able to handle the bearing load of the A-Go Gro vertical farming system the rooftops can potentially be converted to rooftop farms.The growing of kangkong (water spinach)on these rooftops can easily meet 60% to more than twice the demand for leafy vegetables. It is also able to meet 10–41% of total vegetable demand. If rice is being substituted by another staple — sweet potato (root vegetables belong to the classification of other vegetables according to AVA), it will be able to meet the demand of 8% demand of other vegetables or 14% demand of staples.

Table 1: Percentage of meeting vegetables/staples demand with the A-Go Gro System

Vegetables	A-Go Gro System (t/ha)	Estimated Yield 50% efficiency of all rooftops (t/ha)	Percentage of leafy greens demand met	Percentage of vegetables demand met
Kangkong	125–500	55,000–220,000	60–242%	10–41%
Sweet Potato	80	35,200	8%	14%

DISCUSSION

As a small city-state that relies heavily on food imports, Singapore must innovate itself in terms of its food production. This innovation does not only refer to where food is grown, but also how it is grown and also what Singaporeans eat. By demonstrating that the use of rooftop spaces alone, using high-technological ways of growing vegetables such as hydroponics, can conceivably meet 60–242% of its leafy greens demand and 10–41% of its overall vegetable demand. It is thus crucial to rethink how Singapore can meet be more self-sufficient and improve food security. From park spaces to empty state land, waste woodland, forest sites and even streetscapes, these spaces can definitely accommodate food production with a rethink in terms of policies pertaining to agricultural activities.

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Turning urban waste into an economic asset for urban and peri-urban farming in Sri Lanka

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Abstract **– To assess the current situation of municipal solid waste (MSW) composting opportunities and potential acceptance of nutrient enriched pelletized compost in Sri Lanka,two field surveys were conductednationwide and in Kurunegala (North-western) area, respectively. Due to the low nutrient content of MSW compost, it qualifies mostly as a conditioner of the soil's physical properties. As a result the compost so far produced across the country has received limitedattention. The surveys indicated that if the nutrient levels are in-creased, 74% of the farmers surveyed are willing to use thecompost. The percentage willing to use compost was similar among farmers of the three most common crops; coconut, paddy and vegetables,ranging from 72 to 77%. Using the land use pattern, the crop cultivation databases and the willingness to use (WTU) results, the potential demand for compost was estimated.As per the results, in the urban context of Kaluthara,a 160% larger capacity plant (present input capacity 38 t/day)would be needed to satisfy market demand within a 10 km radiusof theplant. For the Attanagalla plant (present capacity 10 t/day) within a rural setting, all compost could be absorbed within 2 km.**

Keywords **– compost, municipal solid waste, septage, urban agriculture, peri-urban agriculture**

INTRODUCTION

The Government of Sri Lanka initiated more than 100 municipal solid waste (MSW) compost plants nationwide and is promoting organic fertilizer as a 'healthier' alternative to chemical fertilizers (Department of National Planning, 2010). However, due to the low nutrient content in MSW compost; it qualifies only as a conditioner of the soil's physical properties and hardly as a fertilizer (e.g. Rouse et al. 2008). This limits the value proposition of the compost and its potential for branding and marketing (Rouse et al, 2008). As a result so far the MSW compost has received limited attention (UNEP, 2015). As this limits the potential for cost recovery to maintain the compost stations,there is a high chance of failuredue to financial unsustainability.

From the environmental point of view MSW and Septage (human waste from onsite sanitation systems)can be identified as two of the major polluting urban waste streams the pollution from these waste streams is common for many low income countries.

Compared to MSW, human waste is considered a superior resource with higher amounts of major and micro nutrients vital for agriculture. Co-composting of two materials (MSW and Faecal Sludge) is able to enhance the nutrient value (Cofie and Koné, 2003). Any further nutrient enhancements (for major nutrients) are possible by blending it with the synthetic fertilizer, if it is raised as a need (Nikiema et al., 2014).

If compost pelletizing is introduced, the bulkiness of the material can be addressed. This innovative product (pelletized compost) is user friendly in handling, storage, transportation, applying at a field level and with the added advantage of a dust-free product.

The aim of this paper is to describe the nutrient enhancement and pelletisation strategies to improve the financial sustainability of the existing MSW composting initiatives in Sri Lanka. An integrated approach of MSW and septage co-composting and pelletizing are currently piloted by IWMI and local partners in Sri Lanka and Ghana.

METHODOLOGY

A nationwide survey was conducted on 13existing compost plants to identify their financial sustainability and details on supply and demand aspects. An additional field survey wasconducted on 250+ urban and peri-urban farmers using a semi structured questionnaire in Kurunagala district (situated in North-western province of the country), where IWMI facilitated the set-up of a pilot co-composting and pelletization station. Three types of farmers cultivating major crop types were interviewed. The crop types were coconut, paddy and vegetable, which are the main cultivations in the localregion.

During this field study two main quality improvements to compost were proposed to local farmers: (a) co-composting organic MSW with nutrient rich fecal sludge and if needed further enhancement ofthe nutrient content in the final compost product, and (b) reduce the bulky nature of the final product through compression and pelletizing.

A willingness to pay study was conducted using the auction method. During the auction the farmers were asked to assume the N value of the enriched pelletized compost was 15%. Fertilizer demand was estimated (base on N demand)with help of GIS maps and using survey results, land use pattern and crop cultivation databases.

RESULTS AND DISCUSSION

Comparable withother tropical soils, more than half of the land area in Sri Lankan suffer from soil organic matter deficiency (DoA, 2014), while there is abundant organic waste accumulating in towns and cities. This includes municipal solid waste (which is to more than 60% organic, MENR, 2005) and septage, i.e. human excreta entering onsite sanitation systems which serve more than 97% of the households in the country.

In addition, the communities from many agricultural regions in Sri Lankasuffer from CKDu (chronical kidney disease of unknown ethology) which is suspected to be as a result of agrochemicals, and though this hypothesis has not been verified, there is a strong political push towards organic substitutes for chemical fertilizer.

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This switch will be difficult given the low nutrient content of the compost currently produced. In fact, most compost plants run at only 30-40% of their design capacity. The range can be wider as shown in the case of the two plants; e.g. Attanagalla and Kalutharaare looking at 8% & 66% production over design capacity and 38% and 67% cost recovery over O&M respectively.

Because of the low demand and low market price (US$ 0.6-0.8 per kg) the average cost recovery of the compost plants remains less than 1/3 of the operational and maintenance (O&M) costs (Fernando et al. 2014). The willingness to pay (WTP) results show a relatively high average WTP of US$0.13 per kg of nutrient rich pelletized compost with the most frequent bid being US$0.15 expressed by every third farmer. These data show a potential increase in market value fora pelletized and enriched co-compost of 70-100% overits current price.

On average 74% of the farmers are willing to use a nutrient enriched and pelletized co-compost. The willingness to use percentage varies in a close range between72 and 77%. Using the land use pattern and the crop cultivation area databases and the willingness to use results, the potential compost demand was estimated for two compost plants (a) one in a semi urban area (namely Attanagalla compost plant) and (b) one in an urban area (namely Kaluthara compost plant) of Sri Lanka. Nitrogen (N) requirement for coconut, paddy and vegetable were considered as 1.4, 0.9, 0.7 t/ha respectively.

Kaluthara (Urban area) compost plant – The Kaluthara compost plant acts as a cluster compost plant for a number of local authorities. The design capacity of the compost plant is 38 t/day. Assuming 20% of compost can be recovered from mixed MSW, compost production can be estimated to be 8 t/day (i.e. the annual compost production is 2,770 t assuming 365 day full capacity operations).

Table 1. Demand for compost in Kaluthara area

Radius(km) from plant*	Potential demand by farmers ('000 t/year)			Tot.demand ('000t/yr)	Supply/demand ratio
	Coconut	Paddy	Vegetables		
10	3.5	3.6	0.06	7	0.4
5	0.8	0.9	0.001	2	1.4

*It should be noted that Kaluthara is a coastal town. Base on N value in Table 1

Attanagalla (rural area) compost plant – Attanagalla is a rural area and an inland town. The design capacity of the compost plant is 10 t/day. Assuming 20% of MSW is used for compost production 2 t compost/day can be recovered. The annual compost production is 730 t by assuming 365 day full capacity operations.

Table 2. Demand for compost in Attanagalla area (Base on N value in Table 1)

Radius (km) from plant	Potential demand ('000 t/year)			Total demand ('000 t/yr)	Supply/ Demand ratio
	Coconut	Paddy	Vegetables		
5	4,010	948	0	4,959	0.15
2	523	258	0	781	0.93

Table 1 and Table 2 show if the value proposition is right,the compost can be sold in an urban and peri urban context. Considering present plant capacities, in a rural context and an urban context (even a coastal town) the compost is sold within 2 km radius (Attanagalla) and within 5+ km radius(Kaluthara).

CONCLUSION

If the costs for nutrient enhancement and pelletizing activities can be kept lower than the proposed market value increase of 70-100% compared to MSW compost, the suggested improvements appear to find sufficient market given the decentralized distribution of Sri Lanka's 116 compost stations.

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Involvement in organic urban agriculture: enabling further steps towards sustainability

M. Simon Rojo[1]

***Abstract* – Food is becoming a powerful vector of social transformation. There are strong linkages between new organic local farmers, groups of consumers and community gardens. A research conducted in Spain, has concluded that engaging in these initiatives has an impact in the way of life, the patterns of consumption and the diet of participants. Before taking part in these initiatives, a large proportion of people were already conscious of the social and environmental problems derived from the global food agrosystems. Joining projects of Urban Agriculture has reinforced them and sharing experiences with others expand their "sustainable" behaviour towards new realms. According to the research, the participants have a quite specific profile: middle-class and high educated people, whose labour conditions are increasingly precarious.**
***Keywords* – CSA, Community gardens, Patterns of consumption, Diet, Social networks, Sustainable food systems**

FOOD AS A VECTOR OF SOCIAL TRANSFORMATION

Food is becoming a powerful factor of social transformation and urban agriculture is increasingly being linked to the concept of resilient city-region food systems (Renting et al 2012). Conscious consumers engage in networks to buy directly to local farmers or to underpin them through Community Supported Agriculture (CSA) initiatives. It is becoming more common that unemployed people engaged in urban agriculture start new agricultural projects in peri-urban areas through direct selling and Participatory Guarantee Systems, that is, through alternatives to the hegemonic system (Cuellar and Guzman 2012). In sum, there are strong linkages between new organic local farmers, groups of consumers and community gardens.

This research focusses on three types of initiatives:

- **community gardens** that are tended collectively and open to the public. These are bottom up initiatives, developed in derelict or public plots within the city. It is not unusual that people engaged in community gardnes end up enrolled in agroecological cooperatives or in groups of consumers
- **cooperatives that integrate production, distribution and consumption**. These are developed as agroecological projects in the form of CSA and consumers get engaged in the agricultural activities. Self-management and governance are key issues, they are usually run by a horizontal assemblystructure,
- **groups of consumers**, that organize themselves to buy directly to the producers. Although some participants are merely oportunistic, looking for better prices on organic products, usually they are also willing to support the farmer.

Food production in community gardens is relatively small and there is no commercial transition, whereas in the other two types is at the core of the initiative and vegetables are sold. Direct selling accounts for 14% of total biological production in Spain, projects and cooperatives of consumers and producers and groups of consumers are a relative small part of this figure (6%) (del Valle 2013).

It is a common place that after urbanites engage in these initiatives, their way of life, their patterns of consumption and their diet change. Little evidence is given to support this statement, it is mainly based in personal perceptions. If proven right it could boost the aspirations of social movements regarding agroecology and food sovereignity to integrate these issues in the policy agenda. So far, most food projects in Spain emerge as bottom-up initiatives, and a reaction from the local government is needed to make a definitive impact (Van der Schans 2015).

METHODOLOGY, GETTING TO ANSWERS

In 2015 we have conductred a survey: a questionaire was made about how becoming part of an agroecological project or a group of consumers, had influenced the lifestyle of respondants. The questions were centred about diet and consumption patterns (meat intake, consumption of seasonal products and buying in local shops), participation in actvities in the neighbourhood (community building) and the final one related to the attention they pay when buying food to labour conditions of workers.

The questionnaire was mainly disseminated by email to networks and organised groups. An article informing about the survey was also published in a digital blog of "El Pais", one of the main Spanish newspapers.

SPEFICIC PROFILE

The collection of data lasted two months and over 250 questionnaires were collected. It provides some basic results to sustain the previous claim on the positive impacts of these forms of UA. The sample was composed of 54% from Madrid metropolitan area and 46% from the rest of Spain. 53% were engaged in groups of consumers, 12% in community gardens or integral cooperatives and 34% participat in both kind of projects.

These projects are supported mainly by middleclass, high educated people (over 80% have an university degree) whose labour conditions are increasingly precarious. Nevertheless there is still a large proportion (45%) with permanent jobs. 45% have been engaged in the project for 1 to 3 years, 44% for 3 to10 years, 11% for less than 1 year.

A gender bias was found, 65% respondants were women. Since single households are the exception, it seems that it is still they who bear the brunt of home care.

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STRONG PATTERNS OF INFLUENCE

The most common change after joining an UA initiative is related to patterns of consumption: 84% of the participants prefer seasonal products and 60% buy more freuentiently in local shops. There is also a considerably impact in the diet: 15% were already vegetarians, but another 60% of people engaged in these kind of initiatives do reduce the amount of meat, which results in a reduced pressure on natural resources (land, water, etc.). They eat more vegetables and more diverse, specially those engaged in box schemes.

Respondants stress that taking part in these initiaties have raised their awareness, they have changed their attitude towards food and farmers *"I appreciate more what I eat and the work of the farmer", "I make a better use of food, no more waste of food at home"*. Related to this point, respondants pointed out also to the positive impact in reducing the use of packaging and the generation of waste. The effect has not been reflected so clearly in the pattern of movility. Only 29% have reduced the use of private car (another 20% never used it before joining the project).

Higher consciousness on the social problems derived from the global food agrosystems are also reflected in an increased awareness of social inequity: 68% are more concerned about labour conditions of farmers and workers in the food chain (26% took this into account already). For some respondants, being part of these initiatives is a way "to consciously creating spaces of relation and exchange outside the rules of the market".

59% participate more in local social activities, strengthening neighbourhood networks, 39% was already very active before joining the project.

THE CHALLENGE: NOT (YET) FOR THE PUBLIC

According to the answers, a relatively large proportion had previously some of these concerns in mind, but joining projects of UA has reinforced them and sharing experiences with others expand their "sustainable" behaviour towards new realms. Being part of a group is seen as a way of collective learning, self management and socialization. *"It has helped me to put my ideas -or good intentions- into practice", "it has improved my sense of responsibility towards society".*

But, being part of a project with a high level of selfmanagement is a time-consuming task, as participants assume part of the work (mainly distribution and organization). The balance between effort, work and dedication, price and amount of food is not always clear (some projects are in fact exercises of political activism). Those that remain in the projects are the ones that appreciate the rest of values: they emphasize the social component of getting involved in these initiatives: *"happiness", "personal satisfaction"* are words that appear over and over. They are connected to emotions like *"feeling part of a change"*. As was explained in the methodology, participants have a very specific profile, the challenge to bring these initiatives to the public and make it easier for the whole society to change their relation to food without becoming a *"campaigner".*

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Urban gardens in the city in crisis. Insights from Sevilla (Spain)

J. Pourias, R. Puente Asuero, C. Aubry[1]

***Abstract* – In Spain, the financial crisis of 2008 has had various consequences on the Spanish economy and on Spanish citizens, affecting both their material and immaterial conditions of living. In this context, many consider that the development of urban gardens in southern European cities is a response to the crisis. However, the relation between the creation of urban gardens and the economic crisis has not been investigated. We used a mixed methodology, which included on-field observations, interviews with local stakeholders and archive exploration, to investigate the link between the creation of urban gardens in Sevilla and the context of economic crisis. We identify three different processes related to the economic crisis, which impact the dynamics of creation and functioning of urban gardens in Sevilla: (i) the varying implication of public institutions, (ii) an evolution in gardener's profile and motivations, (iii) a diversification of the types of initiatives. We detail and discuss each of these three processes.**

***Keywords* – Urban gardens, Collective gardens, Crisis.**

INTRODUCTION

In Spain, the financialcrisis of 2008 hit the country in a peak of economic prosperity in terms of GDP growth and employment creation, driven mainly by the construction sector and related industries and services. This crisis has had various consequences on the Spanish economy. The abrupt slowdown of the construction industry left many construction works unfinished and vacant buildings. The rate of unemployment rose suddenly. With regards to Spanish citizens, the crisis affected both their material conditions of living and immaterial aspects including well-being, health or maintenance of traditional habits(Guardiola and Guillen-Royo, 2013). Insouthern Europeancountries, converging signs show an alteration of access to quality food and food patterns of households as an indirect consequence of the economic crisis(Kirby, 2013; Prudhomme, 2013). In this context, many advocates of urban agriculture consider that the development of urban gardens in southern Europeis a response to the crisis(Angeles, 2012; Cueto, 2014). However, the relation between the dynamics of creation of urban gardens and the economic crisis remains to be investigated. Through the case study of Sevilla, we proposeto contribute to the understanding of the dynamics of creation of urban gardens in the city and how the economic crisis affected or not this dynamics.

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METHODOLOGY

Visits to the gardens and on-field observations

In spring 2015, we visited 9 urban allotment gar-dens and 3 urban agriculture projectsin Sevilla. During the visits, general information about the project, its history, its status and its organization were collected.

Interviews

Two types of interviews were conducted. 7 inter-views with local stakeholders aimed at understanding the general context of urban gardening in Sevilla and the role and position of institutions and organizations involved in the creation and management of urban gardens. 11 interviews were also conducted with gardeners in the Parque Miraflores and in the Parque del Alamillo to understand the motivations of gardeners and their objectives.

Archive exploration

We worked on the archives of the Agencia de Vivienda y Rehabilitación de Andalucía (AVRA), a service of the Region of Andalusia in charge of managing public lands, which was at the origin of the creation of the ParquedelAlamillo garden.These archives contained application files sent by each gardener willing to obtain a plot at the opening of the garden in 2013, which included a document explaining the motivations of thefuture gardeners. The motivations mentioned by applicants in the application files were grouped together by keyword, and then sorted into broad themes of motivations.

RESULTS

History and location of urban gardens in Sevilla

In Sevilla, the first urban allotment garden (Parque Miraflores) was created in 1987 upon the demand of inhabitants of the northern district of Sevilla. This firstexperience has served as a model for the other gardens created later. Since then, 10 other gardens have been created, 6 of them since 2008.9 of them are situated on public lands: 6 on municipal land, 2 on a land belonging to the Region of Andalusia and 1 on a land belonging to the Province of Sevilla. 1 is situated on a private land.Thesegardens are the result of sometimes lengthy processes that involve at the same time citizens' requests brought by local organizations, usually rooted in a wider dynamic centred on a neighbourhood, and more or less proactive intervention of local authorities. We identify three different processes directly or indirectly related to the economic crisis, which impact the dynamics of creation and functioning of urban gardens in Sevilla: (i) the varying implication of public institutions, (ii) an evolution in gardener's profile and motivations,(iii) a diversification of the types of initiatives.

Institutional support and initiatives

Two public institutions have been involved in supporting and promoting urban gardening for the

past 10 years in Sevilla: the Ayuntamiento de Sevilla (the City Council) and the Junta de Andalucía (Region of Andalusia).

The City Council was actively involved from 2004 to 2011, through the implementation of participative budgets. This program came from a political will, and aimed at decentralizing the attribution of municipal budget and at increasing participatory democracy. It brought to the foreground local demands to create two new urban gardens and gave support to existing ones. The participative budgets ceased in 2011, after the election of the right-wing party at the City Council.

The implication of the Region of Andalusia in the creation of urban gardens arrives more lately, through the AVRA. During the years of the real-estate "boom" (2000-2008), AVRA mostly acted as a real-estate developer. The crisis led to the collapse of the land prices and the slowdown of the construction industry: many construction projects stopped and a lot of land remained vacant. For a few years, AVRA has been investigating new ways to use these vacant lots, which forced it to change its basic mission. One of the options to use the vacant land owned by AVRA has been the creation of urban gardens. Four gardens were created across Andalusia, including one in Sevilla (Parque del Alamillo).

Evolution of gardeners' motivations

While urban gardeners were previously mostly retired people gardening for leisure and social contacts, interviews show that more and more young and unemployed people appear on the lists to access a garden.

We identified several motivations described by gardeners or applicant gardeners as responses to the effect of the economic crisis. Some are linked to the direct effects of the crisis, like growing food in order to save money. Other motivations were more related to the indirect effects of the economic crisis. With respect to this latter aspect, we identify two set of motivations. Firstly, many gardeners describe the garden as a mean to strengthen the family and to transmit traditional values to the youngest, referring in many cases to an idealized vision of the past life in the countryside. The garden appears as a "healthy place" for family lifeand a way to produce its own food in a search for self-sufficiency that would allow being more independent of the stir of the society. Secondly, another set of motivations relates to a will to experiment new models of social organization. Gardeners describe a will to build a new society, the garden being seen as a "small world", where to put in practice this new organization.

Diversification of the types of projects

Aside the creations of urban gardens, since the beginning of 2010's four entrepreneurial urban agriculture projects have emerged in Seville. These projects are led by organizations that previously had direct or indirect experiences in creation and management of urban gardens. All these projects share the will to create meaningful jobs in a context of crisis that let many unemployed and that calls more broadly for a re-assessment of the current economic system. Three of them envision local food production as a mean to experiment alternative ways of development that beneficiate to disadvantaged population and neighbourhoods.

CONCLUSION

The crisis did have an influence on the creation of gardens; however, in Sevilla, a strong dynamic of creation of gardens already existedbefore 2008. The crisis has changed some parameters, like the cost of the lands which has engaged public authorities to look for alternative ways to use vacant lots. However, politic context has also played a very important role in the creation of gardens since the beginning of the 2000's.With respect to the motivations of urban gardeners, gardensare seen by some as a way to produce food and then to save money. However, it appears that gardeners have not massively turned towards the gardens to save money, as this is sometimes recounted in press articles. In urban gardens, the most visible impacts of the economic crisis are linked to its underlying effects, causing a lack of confidence in the capacity of the actual society and economical model to provide good living conditions. We have witnessed that several entrepreneurial urban agriculture projects have emerged in Sevilla for the past years. These projectspotentially repre-sent a more powerful response to the crisis than urban allotment garden per se. Therefore, while we emphasize the need to assess thoroughly the actual benefits derived from urban gardens regarding various aspects such as food access, health, etc., we underline herethat an interesting aspect of urban allotment gardens in the city in crisis may also be the space they create to experiment networks and social organizations and to foster knowledge and know-how that allow the emergence of professional urban agriculture projects.

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Agricultural Waste Utilisation Strategies and Demand for Urban Waste Compost: Evidence from Smallholder Farmers in Ethiopia

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***Abstract* – Competition between fuel and feed is the major cause for the insufficient application of agricul-tural waste on cropland. The aims of this study were therefore (i) to investigate variation in agricultural waste allocation between different typologies of farmerlink this with partial nutrient balances, (ii) to identify farm characteristics that influence utilisation of agricultural waste for soil amendment, and (iii) to assess demand for urban waste compost. Four groups of farmers, namely (i) field crop farmers, (ii) vegetable producers, (iii) ornamental plant growers, and (iv) farmers practising mixed farming, were identified. Field crop farmers produced the largest quantity of agricultural waste, but they allocated 80% of manure for fuel and 85% of crop residues for feed. Only <10% of manure and crop residues were applied on soils. These farmers also sold manure and crop residues, and this generated 5-10% of their annual income. In contrast, vegetable and ornamental plant growers allocated over 40% of manure and crop residues for soil amendment. Hence, the nutrient balance was more positive in vegetable production systems. Education, farm size, land tenure and access to extension services were the variables that influenced allocation of agricultural waste for soil amendment and compost demand.**
***Keywords* - Animal manure, Crop residue, municipal waste, urban farming**

INTRODUCTION

Small fractions of animal manure and crop residues are retained on croplands in many developing countries due to high competition of agricultural waste with other uses such as feed and fuel(Baudron et al., 2014).It is therefore essential to identify socioeconomic characteristics that impede farmers to allocate agricultural waste for soil amendment. We hypothesize that farmers with a different production goal and socioeconomic status have different waste utilisation strategies. For example, subsistence field crop farmers may prefer to utilise agricultural waste for feed or fuel. In contrast, vegetable producers might apply more manure and retain more crop residues on field because vegetable production demands a high nutrient input and generates a rapid economic return (Abdulkadir et al., 2012). Similarly,land entitlement might encourage farmers to allocate large quantities of agricultural waste for soil amendment. Availability of labour and farm sizecould also determine farmers' decisions to allocate agricultural waste for soil amendment since investment is required to transport agricultural waste (Tittonell et al., 2005). Other organic resources such as urban waste should also be considered as an alternative option for soil amendment in farming systemswhere competition of agricultural waste is a major concern. Thus,the objectives of this study were: (i) to investigate the utilisation of agricultural waste between different urban farmers and link this with partial nutrient balances, (ii) to identify farm characteristics that influence farmers' decisions to use agricultural waste as a soil amendment, and (iii) to assess the demand for non-agricultural waste (i.e. urban waste) compost.

METHODOLOGY

The study was conducted in Addis Ababa, Ethiopia. Farms that represent the existing urban farming systems were selected using field observation and secondary sources. A total of 220 farmers were then randomly selected andclassified into four groups based on their production goal and livelihood strategies.Individual farmers were interviewed about their agricultural waste utilization strategies and willingness to use urban waste compost as alternative soil amendment.

Samples were collected from soil, plant, irrigation water, manure and compost to quantify partial balances of nitrogen (N), phosphorus (P), and potassium (K) across different farmers group. Three farms were selected from each farmers group. Soil, plant, manure and water samples were then analysed for N, P and K.

Categorical principal component analysisand two-step clustering were used to classify the farmers into four distinct groups.The contingency valuation method (CVM) was implemented to estimate the demand for urban waste compost. A binary logit model was also used to determine socioeconomic variables that influence allocation of agricultural waste and compost demand.

RESULTS

Current Uses of Agricultural Waste

Agricultural waste utilisation varied significantly (P<0.001) between the different farmer groups. Field crop farmers allocated over 80% of manure to fuel consumption and only 5-10% to soil amendment. In contrast, ornamental plant producers allocated 34% of manure to fuel and 56% to soil. Field crop producers and mixed farmers allocated over 83% and 76% of crop residues to animal feed respectively whereas vegetable producers retained 62% of crop residues on their field. Manure and crop residues also served as income sources. Many respondents sold manure and crop residues (i.e.teff (Eragrostistef) and earned more than $50 yr-1. This is equivalent to 5-10% of their annual income. The econometric analysis (Table I) showed that farmers who have access to education and extension services allocated manure and crop residues mainly for soil amendment. In contrast, farmers with insecure landownership and large farm size utilised agricultural waste mainly for household fuel consumption and animal feed.

Demand for urban waste compost

More than 58%of our respondents expressed a willingness to contribute money and/or labour for urban waste com-post; however, the bid varied significantly (P<0.01) be-tween the farmers groups. Ornamental plant growers expressed the highest price for 100kg compost (US$ 1.76) whereas field crop farmers bid the lowest price (US$ 0.60). We observed that many field crop producers preferred to contribute labour rather than money for urban waste com-post. Our result also demonstrated that farmers who have experience on organic amendments showed the highest compost demand. The econometrics analysis (Table I) showed that education, landownership, experience with organic amendments and accesses to extension services were the variables that determined the demand for urban waste compost.

Table I: Parameter estimates of socioeconomic variables that influence farmers' decisions to use agricultural waste for soil amendment and willingness to pay

	Waste for soil		WTP	
Variables	Coefficient	Wald	Coefficient	Wald
Education	0.34*	2.47	0.94*	2.98
Labour	0.10	0.86	0.04	0.26
Land size (ha)	-0.60***	6.92	-0.03	0.03
TLU	0.04	0.90	-0.06	2.54
Soil fertility problem	1.29**	3.40	0.03	0.00
Experience on compost	NA	NA	2.43**	13.20
Land tenure (%)	0.89*	2.01	1.85**	12.97
Extension service	1.01*	2.38	1.66**	8.54
Constant	-4.55	9.26***	3.21	
Chi-square values	55.5***		132.3**	

*, ** and *** denote significance at P<0.05, P<0.01 and P<0.001, respectively; NA = Not applicable; TLU = Tropical livestock unit; WTP = Willingness to pay

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DISCUSSION

The nitrogen balance was negative in mixed farming and field crop production systems, but positive (20 Kg ha-1 yr-1) in vegetable farms. The partial balance for potassium was negative in all urban and peri-urban farming systems (data not shown).The negative nutrient balancesin our study could be resulted from the application of inorganic fertilisers below the recommended rate(Kassie et al., 2009) and insufficient application of organic amendments. We observed that the application of manure and compost was limited. Furthermore, only vegetable producers and few farmers who practised mixed farming used irrigation.Previous studies showed that irrigation is the main source of plant nutrients in urban and peri-urban agricultural systems (Abdulkadir et al., 2012; Khai et al., 2007). Nevertheless, only 21 Kg N ha-1 yr-1, 2.4 Kg P ha-1 yr-1 and 55 Kg K ha-1 yr-1 were added from irrigationin the area.Negative nutrient balances in our study but positive nutrient balances in the previous studies (Abdulkadir et al., 2012; Khai et al.,2007) under similar production systems suggested site-specific analysis of nutrient balances. Farmers withsimilar production orientation could have different input uses and soil fertility management strategies. Furthermore, farmers under similar production systems could vary in terms of socioeconomic characteris-tics and livelihood assets.

High competition of agricultural waste with other uses such as fuel and feed is the main reason for limited application of organic amendments and thereby results negative nutrient balance in the area. We observed that the use of agricultural waste for fuel could continue into the future because other energy sources (i.e. kerosene and electricity) are not affordable and/or accessible for many farmers.Interestingly, many urban dwellers also use cattle dung as fuel, probably due to high poverty in the urban areas.The demand for dung as fuel creates market opportunities for many farmers to sell cattle dung to nearby markets.Crop residues, especially from teff (Eragrostistef), are also used as building material. The high demand for building material also creates market opportunities for many field crop farmers to sell their crop residues.Agricultural waste generated 5-10% of farmers' annual income.The current use of agricultural waste observed in our study is consistence withValbuena et al., (2015) who reported allocation of 80% crop residues for feed and less than 20% of crop residues for soil amendment in sub-Saharan and South Asian counties. Hence, our results suggest technology interventions that encourage farmers to use other sources of fuel such as fuel wood, so that agricultural waste could be used mainly for soil amendment. Intensification of crop and livestock production could also be viable option to feed the livestock as well as utilise crop residues for soil amendment. We observed variation in allocation of agricultural waste between different farmers groups. The variations could be due to differences in socioeconomic characteristics and level of intensification.In general, intensified urban production systems (e.g ornamental and vegetable production systems) and farmers with better access to livelihood assets utilise agricultural waste mainly for soil amendment.For example, insecure landownership impeded many field crop farmers from using agricultural waste for soil amendment because land tenure prevents farmers from investing in their farmlands (Kassie et al., 2009). High cattle density in field crop production system could also be another reason to retain small fraction of crop residues on farmlands. Education, extension services and compost experience were also influence allocation of agricultural waste for soil amendment (Table I), probably due to increasing farmers' awareness about the benefits of organic amendments. Similarly, Jaleta et al., (2014) report the significant influence of extension services on the retention of crop residues on farmland.

Urban waste compost could be alternative soil amendment for urban agricultural systems where competition of agricultural waste is a major concern. We observed a high demand for urban waste compost among our respondents. Consistent with this finding, 70% of farmers in Cameroon (Folefack, 2005) and over 80% of farmers in Ghana (Dansoet al., 2006) are interested to accept urban waste compost. In our study, the respondents bid very small amounts of money for compost compared with the previous studies (Folefack, 2005;Dansoet al., 2006). However, the current bids were almost twice as high as previous studies when labour is included to estimate compost demand. This implies that labour should be included in addition to money to estimate compost demand because resource-poor farmers expressed their compost demand via a willingness to contribute labour since labour is readily available and cheaper than money in developing countries. We confirmed that education and creating awareness is crucial to increase the adoption of urban waste compost.To conclude, competition for agricultural waste between fuel and feed is a major cause for limited application of organic amendmentsin developing countries. Hence, replacement of fuel and feed through sustainable means other than farm waste is crucial. Urban waste compost could also be an alternative soil amendment for urban farming systems. Finally, we suggest that both labour and cash should be used to estimate compost demand.

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WG13 - Care Farming/Social Farming in more resilient societies

The concept of multifunctional agriculture has new implications in the provision of social services, in rural, peri-urban and urban areas. Social/care farming (SCF) is an innovative approach to nature-based activities and services organised at farm level and is increasingly becoming mainstream. The reorganisation of economic processes on a global scale requires re-orienting of local systems and territories to respond to local needs. It includes the mobilisation of local non-specialised resources – such as agriculture – for new purposes, particularly social ones. Different models of SCF initiatives are spreading rapidly across the world as a means of enhancing quality of life in terms of therapeutic, education, rehabilitation or social inclusion goals. SCF initiatives are differently labelled, respond to a variety of needs and demands from a wide variety of users (people with diverse disabilities, children, young people, elders, offenders, refugees, people from trafficking, disempowered) for different purposes (care, education, training, civil services, social protection, employment support, poverty reduction, women's empowerment) and actors (such as farmers, the third sector, health and social sectors, service-users and their families and local communities). Globally, there are no standardised definitions of SCF and also traditional community-based practices could be read in the perspective of SFC.

At farm level, SCF has profound implications for farm activities, attitudes, marketing and organizational approaches inside and between actors. At public level, SCF raise questions of subsidiarity, innovative procedures, competencies, policies and attitudes and in the perspective of social inclusion, a generative welfare, social justice and community-based organisation.

In spite of the rapid uptake of SCF, there are still many aspects of the concept requiring clarification. The SCF concept breaks the cultural, sectorial and disciplinary barriers. Its evolution and affirmation is part of a process of transition that is demanding in terms of knowledge brokerage, dynamics and methods to use in facilitating local initiatives. This opens a trans-disciplinary debate and, consequently, to the use of a wide range of theoretical and methodological tools. Further progress should provide scientific evidence of SCFs comparative effectiveness, the impact at farm level and the reorganisation of an economic environment with an emphasis on reputation and responsibility, the definition of specific marketing/labelling initiatives and social innovation policies. Greater understanding of wider impacts on the organisation of local networks where the co-production of economic and social values design new ways of producing and building society in a more civic direction is required.

Progressing our understanding of the complexity of SCFs is vitally important. Criteria should be defined in order to classify social farming practices and take the lesson learnt from previous experiences. It is essential to delineate its priorities to enhance a good coordination between science and practice in the context of transition management and social innovation. Finally, synergies and collective learning should be found with other research fields – such as conservation – promoting multifunctional agriculture.

This working group will welcome contributions from many diverse perspectives including the health/social care domains, sociological and economic research, policy analysis, or sustainability science with the contribution from researchers/academics as well as practitioners, in accordance with a process of knowledge brokerage.

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Research-based evidence of gardening as a physical activity for health

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Abstract **- Benefits of gardening have been reported, however, there is limited research-based data about therapeutic mechanisms of gardening. Thus, several studies were conducted to determine therapeutic mechanisms of gardening as a physical activity for health. In study 1, exercise intensity of various gardening tasks were determined and the metabolic costs of gardening and common physical activities were compared. In study 2, muscle activation by electromyographic analysis for 15 indoor horticultural activities and five common gardening tasks were measured. As for the results of study 1, the gardening tasks per-formed by adultswere moderateto highintensity physical activities. Gardening activities were of the same exercise intensity level as walking at a moderate intensity. As for the results of study 2, during the five common gardening task such as digging, raking, troweling, weeding, and hoeing, the flexor carpi ulnaris and brachioradialis of the upper limb muscles showed higher muscle activation than the other upper and lower limb muscles measured. For 15 indoor horticultural activities, the upper trapezius, thenar eminence, and hypothenar eminence had higher muscle activation than the other muscles. Developing scientific and research-based understanding of the physical health benefits offered through the act of gardening further substantiates the role of care farming/social farming in contributing to healthy, resilient communities.**

Keywords **– care farming, social farming, physical functional ability**

INTRODUCTION

The metabolic equivalent (MET) is a unit to express the exercise intensity of physical activity (Ainsworth et al., 2000). Below 3 METs indicate low intensity physical activity, 3 to 6 METs indicate moderate in-tensity physical activities, and above 6 METs present high intensity physical activity (Pate et al., 1995). To get health benefits for adults, at least 30 minutes of moderate intensity physical activity on most days of the week is recommended (Pate et al., 1995). Although gardening is a popular leisure-time activity, research-based data on the METs of gardening tasks for applying gardening tasks as a physical activity or treatment are lacking.

Electromyography (EMG) measures the electrical signal produced by skeletal muscle, which results from muscular contraction (De Luca, 1997). Analysisof EMG has been widely used to provide specific infor-mation on the functions of agonistic and antagonistic muscles, to detect medical abnormalities, or to bio-mechanically analyze human or animal movement (De Luca, 1997). EMG data for various gardening tasks could be useful information for developing an efficient gardening intervention for physical health or rehabilitation. However, studies analyzing the move-ments of the human body during various gardening activities is lacking. The objectives of study 1 were todetermine the exercise intensity of various common gardening tasks in adults in their 20s and to compare exercise inten-sity between common physical activities and garden-ing activities.

The objectives of study 2 were to conduct movement and activation analysis of the upper and lower limb muscles during five common gardening tasks and to investigate specific upper limbs and hand muscle activation during 15 common horticultural activities by using EMG.

METHODS

Study 1: Fifteen Korean subjects (mean age 24.7 ±1.4 years) performed ten gardening tasks in a high tunnel and a grassy area with weeds and vegetable harvesting. Subjects did each gardening task for 5 minutes and then had a 5-minute resting time by sitting in a chair. Each subject wore a portable telemet-ric calorimeter (K4b^2; Cosmed, Rome, Italy) and respired into the facemask during the gardening tasks and resting periods to measure their oxygen uptake (Park et al., 2014). Moreover, 19 subjects (mean age 25.3 ±2.3 years) performed two horticultural activities such as creating a vegetable bed and garden maintenance and common physical activities such as running, skipping rope, walking, and muscle strength exercises in a glasshouse at Konkuk University. Each subject wore a portable indirect calorimeter (K4b^2; Cosmed, Rome, Italy) when carrying out the activities (Park et al., 2014).

Study 2: Twenty male adults (mean age 24.8 ±2.4 years) conducted five gardening tasks such as dig-ging, raking, trowelling, hoeing, and weeding at a garden plot at Konkuk University. The subjects did each gardening task three times with 20 second intervals between each trial. During each gardening task, upper and lower limb muscle activation weremeasured by using surface EMG (Desktop DTS; Norazon, Scottsdale, USA) (Park et al., 2014). Further-more, 30 adults (mean age 24.8 ±2.8 years) performed 15 common horticultural activities in a glass greenhouse at Konkuk University. Each subject did each horticultural activity for 60 seconds with a 15-second resting time between each activity and a port-able four channel EMG instrument (Myotrace 400; Noraxon, Scottsdale, AZ) was used to measure the muscle activation (Park et al., 2013).

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RESULTS AND DISCUSSION

Study 1: The 10 gardening tasks were determined to be moderate-to high-intensity physical activities for the subjects (3.5 ± 0.5 to 6.3 ± 1.2 METs) (Park et al., 2014). Most of the gardening tasks in adults were moderate intensity physical activity: planting transplants (3.5 ± 0.5 METs), mixing growing medium (3.6 ± 0.5 METs), watering (3.9 ± 0.4 METs), harvesting (4.2 ± 0.6 METs), sowing (4.3 ± 0.8 METs), hoeing (4.4 ± 0.8 METs), mulching (4.5 ± 0.6 METs), weeding (5.0 ± 0.8 METs), and raking (5.4 ± 1.0 METs). Watering, mixing growing medium, and planting transplants were of lower intensity than the other gardening tasks among the moderate-intensity garden-ing tasks (Park et al., 2014a). Digging was the most intense task tested in this study (6.3 ± 1.2 MET).

Moreover, the exercise intensity of the two horticultural activities and four common physical activities were moderate to high intensity physical activity (3.8 ± 0.9 to 9.9 ± 2.1 METs) (Park et al., 2015). High-intensity activities were running (9.9 ± 2.1 METs) and skipping rope (8.8 ± 2.2 METs), whereas moderate-intensity activities were creating a vegetable bed (5.0 ± 1.2 METs), walking (4.9 ± 0.8 METs), muscle strength exercise (4.5 ± 1.3 METs), and garden maintenance (3.8 ± 0.9 METs).

The exercise intensity of gardening tasks should be useful information for developing gardening programs for health benefits. It would also be valuable when developing a series of garden tasks for developing a gardening intervention or horticultural therapy program for health benefits.

Study 2: In the five gardening activities, EMG activation of the upper limb muscles was higher than that of the lower limb muscles (Park et al., 2014b). Activation of the right brachioradialis and flexor carpi ulnaris had higher activation values than any other upper limb muscles. This is because gardening tasks were mostly conducted using upper limb muscles, while lower limb muscles played a role in supporting the body. When digging, troweling, and weeding, the anterior deltoid, and when digging alone, the biceps brachialis showed a statistically significant activation level compared with other right upper limb movements.

Moreover, six muscles such as upper trapezius, triceps—long head, biceps brachialis, flexor carpi ulnaris, flexor carpi radialis, and brachioradialisin the upper limbs and two muscles such as thenar eminence and hypothenar eminence in the hand were varied when doing a cross section of horticultural activities (Park et al., 2013). Overall, the upper trapezius, thenar eminence, and hypothenar eminence inthe hand displayed higher muscle activity than the other muscles measured. The thenar eminence and hypothenar eminence were the primary muscles used for gripping, which is one of frequented motions used for the horticultural activities.

This analysis maybe used to generate biomechanical profiles of gardening tasks for practitioners when designing efficient gardening interventions for physical health or rehabilitation.

As it relates to care farming/social farming, the understanding gained from these types of studies may be helpful in identifying farm/gardening tasks that can be successfully completed by the population be-ing served.

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Community resilience through urban agriculture: the role of volunteers in horticultural therapy

Candice A. Shoemaker, Paula Diane Relf[1]

***Abstract* – This paper will review the role of volunteers historically and currently in the application of horticulture in therapeutic settings; the impact on the development of the profession of horticultural therapy; and the impact that the actions of volunteering has on the volunteer and the community. Recommendations on how volunteers can contribute to care farming/social farming and how volunteers are currently used in social farming/urban agriculture in the United States will be given.**

***Keywords* – Volunteers, Horticultural Therapy, Therapeutic Horticulture, Social Farming, Urban Agriculture.**

INTRODUCTION

Historically volunteers have been involved in the application of horticulture in therapeutic settings in the United States. For example, the development of horticultural therapy (HT) as a profession has probably been mostly influenced by its role in occupational therapy and by volunteers from the National Council of State Garden Clubs (NCSGC) and Master Gardeners (MGs) (Shoemaker, 2002). During and following World War II, volunteers and members of the NCSGC assisted occupational therapists in using plants and gardening activities in their therapy and rehabilitation programming. In 1951,the NCSGC named HT as one of the major objectives of members clubs, which it remains today (Simson & Straus, 1998).

Master Gardeners, another group of volunteers, are university-trained and serve as educators in their communities with primary emphasis on home gardeners. When the MGprogram began in the mid-1970s, its focus was primarily directed at diagnosing plant problems and offering solutions. While still a major focus, MGsnow assist in a variety of educational programs including programs regarding the welfare of youth, senior citizens, and persons with disabilities. Research on the role and impact MGs have in the application of horticulture in therapetuic settings began to be reported in the 1990s (Flagler, 1992; Migura, Whittlesey & Zajicek, 1996; Kafami, 1997; Larson, 1997; Marshall, 1997).

THE ROLE OF VOLUNTEERS IN HORTICULTURAL THERAPY

Volunteering is an important activity in the United States, with people each year giving their time with-out any expectation of compensation. Last year, 62.6 million Americans volunteered 7.7 billion hours at an estimated $173 billion value of service (http://www.volunteeringinamerica.gov/info-graphic.cfm).

Volunteers can have many roles in HT from being completely in charge of establishing and conducting a HT program to providing garden labour. A HT profes-sional may recruit volunteers to assist with garden maintenance, helping with program preparation, and assistance during programmatic sessions. A Cooper-ative Extension Agent may have MGsinterested in HT, thus may provide introductory training in HT. The MG may then use that training to introduce HT to facilities and clients typically served by HT. MGsmay also de-velop and deliver HT programs.

As a leader inhorticultural therapy in the U.S.and the State Specialist for the Virginia Master Gardener program, P.D. Relfassisted several Master Gardener groups interested in volunteeringin horticultural ther-apy. She observed that for volunteers working with patients in HT, the goals are often much more generalized than those of professionals, and they generally are not required to maintain records in the same way as professionals. The generalized goals of volunteers in HT include helping the client have fun and laugh, helping the client understand that he or she is still valuable and people from their community still care about them, helping the person improve physically by getting the exercise of gardening, or helping an elderly person improve mentally by talking about childhood memories of gardening to someone who truly wants to listen. For MGsthe goals may be different as these individuals are committed to working through Cooperative Extension as volunteer educators to make long term changes in their community. For example, their primary goalmay be to support and ed-ucate facility staff until they are ready to take on the full responsibility for a HT program(Relf, based on professional experience).

1990 national survey foundof the 45 states that had MGprograms, 21 of the 39 that responded to the survey had Master Gardener-assisted HT programs (Flagler, 1992). Populations served were the able elderly, geriatric clients, mentally disabled, physically disabled, and those in prisons or correctional facilities. The report did not indicate how the MG assisted the programs, however two examples given by the author were led and delivered by MG. Flagler concluded that "Programs like these demonstrate the role MG play in HT settings. By bringing structured gardening and nature craft activities to special populations, they helpto provide stimulation and enjoyment and, in many cases, rehabilitation and training" (p. 249).

IMPACT OF VOLUNTEERS

The impact of volunteers on the profession today seem to be similar as those in earlier reports linking volunteers and "garden therapy", primarily as a way to expand HT programs. Economic realities have made it difficult to expand HTprograms and implement new ones. Volunteers aid professionals in delivering more programs and serving more clients.

Broader impacts are reported for some MGHT programs. These programs may have goals such as to introduce administrators, staff members, and clients to

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HT, provide information on resources available to administrators so that HT can become an ongoing program, identify funding sources for HT programs, encourage agencies and facilities to employ professional horticultural therapists, and encourage volunteers to pursue professional training and registration asHorticultural Therapists. A Master Gardener Horticultural Therapy program in one county in the state of New Jersey introduced HT to 57 agencies that serve the special needs population in that county (Di Nardo and Sabatino, 2MG p6).The Master Gardeners of James City County, Virginia received a national award, the John Walker Community ServiceAward, from the American Horticultural Therapy Association (AHTA) in recognition of distinguished leadership and significant contribution in horticultural therapy in the area of program services rendered to a community.

The AHTA offers a professional credential in HT although currently there are no legal or professional requirements to practice HT in the United States. There are volunteers (and non-volunteers) with and without training in HT that provide HT services. Larson et al (2010) surveyed the AHTA membership and reported that 46% of the 16.5% of respondents with no training in HT were practicing HT and about 10% had practicedin the past. For HT to be established and recognized as a profession, the role of the volunteer and the professional must be more clearly delineated.

RECOMMENDATIONS FOR CARE/SOCIAL FARMING

Care farming (also called social farming and green care) combines agricultural production with health, social, and educational services (Hassink et al, 2007; Hine et al, 2008). On most care farms in the Netherlands the farmer takes care of the clients which in-clude clients with learning disabilities, mental illness, children and youths, and older persons (Hassink et al, 2010). Most farmers have no professional education in health care. In addition to the farmer and farmer spouse, volunteers are involved (Hassink et al, 2010).Thus it seems that many of the roles volunteers serve in the application of horticulture for therapeutic pur-poses can be applied to care farming.

Care farms offer some element of farming (i.e. crops, livestock, horticulture) and some element of care (i.e. health or social care, educational) but the extent of farming and care can vary. Given the spec-trum of farming and care, the skills and knowledge required by those providing the care farm experience are likely to be broad and varied. Recruiting volunteers to provide a needed expertise is one strategyfor the use of volunteers in care farming. Building a volunteer base of experienced farmhands may also be needed to insure a sufficient amount of productive work is accomplished if the primary focus is on pro-duction on a commercial level. The welfare agency interested in care farming may recruit volunteers that are familiar with the farming industry to foster con-nections between the welfare agency and a farm. In the UK volunteers have long been usedin social/therapeutic horticulture with similar purposes to those in the U.S. -to gain further experience or skills, to 'give something back' to the community or to take a step towards employment (http://www.thrive.org.uk/volunteer.aspx).

SUMMARY

Volunteering is a common activity worldwide and has been an important part of the development of the use of horticulture for therapeutic purposes in the United States. While research of the roles and impacts that volunteers have on HT is limited, that combined with anecdotal evidence demonstrate that volunteers can provide valuable assistance to thefurther develop-ment and establishment of care farming.

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Social farming fostered by microcredit: the case of Italy

Davide D'Angelo, Saverio Senni, Guido Ruivenkamp[1]

***Abstract* - After a description of issues regarding access to credit in agriculture, this paper introduces the social farming. Then, authors describe microcredit in Italy and the recent evolution of its regulation. Afterwards, paper underlines the possible elements of positive synergy between the characteristics of demand of credit expressed by social farmers and the ones of supply of credit expressed by microcredit operators in relation to amount, purposes, warranties and consultant services related to these financings. Finally, authors discuss potentialities of microcredit to support the access to credit for social farmers.**
***Keywords* - social farming; microcredit; access to credit; rural development.**

THE ACCESS TO CREDIT IN AGRICULTURE

Focusing on Italian context, the paper explores possible synergies between microcredit and social farming, in order to outline under what conditions microcredit may represent a suitable instrument to strengthen access to credit for social farmers. The gap between actual needs of financing in farming and loans supplied is considerable, amounting to about 116 million euro a year: this has created be-tween 2010 and 2012 a "credit crunch" of over 300 million euro (Mipaaf, 2014). The agricultural credit has decreased on average of 3% yearly between 2007 and 2012, with a general negative trend from 2011. Different dynamics in relation to credit lines may be distinguished according to time horizon: short time credit grows (+10% yearly), middle time credit decreases (-9%) and long term credit lines are almost stable (-1%) (Eu. Commission, Italian Government, 2014). In such a context the difficulties in obtaining financing may hinder the possibility to invest, but also to be able to access to the measures related to European Agricultural Fund for Rural De-velopment (EAFRD) for 2014-2020. These issues afflict in particular non-bankable borrowers among which there may be those involved in Social farming.

INTRODUCTION TO SOCIAL FARMING AND MICROCREDIT

Social farming may be considered as a modality of multifunctional agriculture (Di Iacovo, Ciofani, 2005; Hassink et al., 2012) and represents an innovative approach in Europe that joins healthcare and social services with agricultural production activities (Hassink et al., 2012). The European Economic and So-cial Committee defines social farming as *"a cluster of activities that use agricultural resources – both animal and plant – to generate social services in rural or semi-rural areas, such as rehabilitation, therapy, sheltered jobs, lifelong learning and other activities contributing to social integration [...]. In this sense, it is about – among other things – making farms places where people with particular needs can take part in daily farming routines as a way of furthering their development, making progress and improving their well-being"* (EESC, 2012). Social farmers are strictly related to own communities and in this frame it's important that public support to fund and sustain these experiences follow a bottom-up scheme, according to the principles of partnership and subsidiarity (Senni, 2013). Considering data available (ARM, 2014) on a sample of italian social farms, related to years 2010 and 2013, the 45,8% of them is placed in the North of the country, the 37,3% in the Centre and only 16,9% in the South.

Regarding the legal status of social farms, 36% of them are agricultural enterprises (both individual ones, the most part, and agricultural cooperatives), and 29% are social cooperative, which include among its members some workers belonging to disadvantaged groups. Moreover, 17% of social farms are associations and 18% have a different legal status (ARM, 2014). Overall, social cooperatives are the most relevant actors who conduct social farming in Italy (Senni, 2010); most of these ones are characterized by small size and, generally, they don't own the lands that they utilize or they cultivate peripheral fields. The lack of own lands or their low value are elements that decrease the as-sets that social farms can use as warranty for a loan, so these are usually not able to provide the request-ed guarantees for accessing to the traditional credit circuit. One possible way to facilitate their access to credit concerns the use of financial instruments as microcredit (Mipaaf, 2010). Microcredit (Mc) consists in programmes that"*extend small loans to very poor people for self-employment projects that generate income, allowing them to care for themselves and their families"* (Grameen Bank). Mc includes a wide range of different activities, but all have two main features: a small amount of each single loan and the absence of appropriate credit warranties by the beneficiary. In relation to microcredit, "to give credit" returns to its original meaning, that is "to give faith" (Becchetti, 2008). In Italy the law of 13rd August 2010, n. 141, has introduced Mc officially, modifying sections 111 and 113 of "*Testo Unico Bancario*" (TUB). Recently, the Ministry of Economy and Finance published the decree of 17th October 2014, n. 176, that makes operational the previous regulation. Mc s provided in the absence of collaterals, but different warranties arepermitted, for example personal ones. Moreover, microcredit provision is joined to the supply of consultance services, concerning for example technical and managerial aspects of an enterprise; these are supplied to the Mc recipient by the Mc provider or a qualified operator. In relation to the maximum amount, entrepreneurial Mc regards loans up to 25,000 €, and in some specific cases up to 35,000 €. In the matter of microcredit operators, they

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are subdivided in two categories: the traditional providers as banks and financial intermediates, and the non-banking ones regulated by section 111 of TUB and the ministerial decree. Regarding beneficiaries, entrepreneurial Mc focuses on natural persons, partnerships and cooperatives: these recipients have to respect clear criteria relating their size, debt levels and time of stay on the market.

POTENTIAL SYNERGIES

Microcredit supports people that want to start new businesses but don't have the necessary esources. Both social farming and microcredit have a common focus on social inclusionin their respective fields. Inthis frame, microcredit could be a preferential tool to finance social farms, that often require few resources to start. Consequently, microcredit could also be an useful tool to obtain financings for accessing to measures of 2014-2020 Rural Development Programmes (RDPs), related to EAFRD. Microcredit and social farming seem to have different elements of synergy. Microcredit provides loans of a small amount, and social farms usually don't require big investments to start; indeed, activities related to social farming are usually inserted in normal agricultural processes that already are present. Microcredit doesn't require collaterals, and social farmers usually own poor property resources, since on a hand they cultivate peripheral lands or lands that they don't own but rent (Senni, 2010), and on the other hand most of them have small dimensions and a recent year of foundation. Furthermore, social farming requires workers with specific skills (such as social, psychological and medical ones), so the consultancy services joined to microcredit supply could be very important for the success of social farmers in their activities. The beneficiaries of microcredit are mostly natural persons, and most of social farms are individual enterprises or cooperatives: therefore, there is a common focus of microcredit and social farming on people rather than on capitals. Moreover, most of Mc providers are strictly connected with needs and issues of own local areas: this could be a positive element to apply this financial instrument to social farms because also these are closely connected with their own communities. In relation to difficulties concerning non-banking providers of microcredit, the aforementioned ministerial decree restricts their target of clients only to self-employed workers or microenterprises who have not owned aVAT registered number for more of five years, reducing the access to microcredit provided by non-banking operators. Nevertheless, on a hand banks and financial intermediates don't have this bond, so they can serve all the clients, and on the other hand a relevant part of social farmers started recently (ARM, 2014), consequently they can access to microcredit through both the providers.

CONCLUSIONS

The capability to access to credit is a fundamental element to grow a business, and also social farming follows this rule. However, the rules regulating the access to credit are not neutral but are organized within a cultural horizon with specific (often unquestioned) assumptions about development, managerial skills, and correct way of farming. Most of social farmers refer to different perspectives and work from within other assumptions (care, pleasure, respect, social justice) which don't facilitate the access to that specific type of credit, causing the phenomenon called "credit crunch" that hits many of them. Microcredit is a financial instrument with a strong ethic imprint that doesn't require collaterals as warranty and offers consultancy services to the beneficiary. It could represent one of the possible ways to facilitate the access to credit for social farmers in Italy, where many new social farms are developing and need financings.

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Social franchising and social farming, for promoting the co-production of knowledge and values: the IBF case

R. Moruzzo, F. Di Iacovo, A. Galasso, S. Paolini, P. Scarpellini[1]

***Abstract* – Social franchising is primarily a method to transfer knowledge from one established enterprise to another that wants to achieve the same social and economic goals. The social franchise is an adaptation of a commercial franchise in which the developer of a successfully tested social concept (franchisor) enables others (franchisees) to replicate the model using the tested system and the brand name to achieve a social benefit. In fact, social franchising combines social objectives (sharing learning and methodologies for greater social impact) with economic objectives. This link is the reason that many consider social franchising to be a potential tool for the growth of social farming initiatives that introduce the co-production of private and public values. The paper opens with an overview of social franchising. Then it explains methodology used for the creation of social franchising for social farming (IBF) and discusses how this tool can be able to facilitate social innovation in agriculture.**

***Keywords* – Social Farming; social innovation; social franchising**

INTRODUCTION

Social franchising is a recent phenomenon that, especially during the last five years, has shown an important growth in Europe and across developing countries (Koehlmoos et. Al, 2009; Bishai, 2008; Ngo, 2010). The European Social Franchising Network (ESFN) identified 63 franchisors in Europe, which created at least 10.000 jobs in the social economy (65% of their employees are disadvantaged in the labour market). Social franchising works in a variety of sectors, reflecting the range of activities in which social enterprises and social cooperatives are involved (Bartilsson, 2012).

Social franchising combines the social objectives (sharing learning and methodologies for greater social impact) with the financial objectives (charging fees for intellectual property and services for greater economic sustainability) (Temple, 2011). In this light, social enterprises could be the carriers for social innovations: in fact social franchising involves the application of business-format franchising to achieve social goals (Smith, 2002) of enterprises through standardization and replication (Alon, 2014). This can be also applied to private enterprises that adopt business models introducing the co-production of private and public values, like in social farming initiatives.

The paper aims to explain the meaning of social franchising, focussing on the objectives of this kind of affiliation strategy, discussing what kinds of actors may be involved, and also considering possible weakness and threats. Then the paper presents a practical case of social franchising, developed at the beginning of 2015, applied to social farming in Italy: the IBF case. The paper analyses the reasons and the role of the franchising in supporting the co-production of knowledge and values, in developing a common language, in reinforcing good practices and creating new networks.

METHODOLOGY

The research started with a literature review looking at publications about social franchising. This suggested also an approach involving case studies, in order to probe the similarities, differences and learning process among these cases.

Hence, in order to investigate the reasons to create a social franchising system for social farming some interviews and focus with different stakeholders involved in SF practices were realised.

This qualitative research, organised at national level (in two geographical areas like Piedmont Region and Tuscany Region), allowed to understand:

- Why a social franchising approach might be attractive for social farming;
- Which principles might be followed in the observed model;

The two areas were not randomly chosen but they are areas in which a lot of stakeholders are active, in the last years, by sharing their knowledge and planning the development of SF practices. Since some years the Piedmont Region is involved in an important action of sensitisation of SF, conducted by Coldiretti, a leading agricultural professional organisation in Italy. At the same time, Tuscany Region is an area in which SF has shown the strongest level of integration, formalization and support.

RESULTS

In Italy Social farming is going to be recognised by law. Today, especially in activities related to social inclusion and job creation, there is an increasing link between social activities and the creation of economic values. This encourages the organisation of systems able to produce interaction among diverse public and private stakeholders as well as citizens and consumers. In this perspective the social franchising system seems to be a tool able to support a process of change. Both the literature and the different examples analysed in the research demonstrate that the nature of the activities of social franchising determines their target markets, funding models and scale.

The existing social franchising models, at different level of scale and scope, bring with them different implications concerning their management system, the role and position of the franchisor, and how the network grows. However, as in the case of commercial franchising, also for the social franchising there are some key aspects such as: a business model proposed by a franchisor, which has been codified into an operations manual, the presence of one or more franchisees, a common brand (under which the social franchisees operate), an interchange of knowledge between members, with a training and support

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activity provided from the franchisor (at start-up and ongoing), an agreement that regulates rights and obligations and secure the sustainability of the franchising as a system, the sharing of the same values between the franchisor and the franchisees.

The owner of a franchise system (the franchisor) enters into a legal agreement with another person or organisation (the franchisee), which grants to the franchisee a licence to use its system, brand and other intellectual property. The franchisor teaches the franchisee the entire business format, and provides support, via training and communications, to the franchisee for the duration of their business relationship. In return for these systems and services, the franchisee pays an initial fee and on-going royalties to the franchisor.

The stakeholders involved in interviews and focus shared some considerations about the idea of social franchising. As a first point, there is still little knowledge about social franchising as a tool although the model of franchising is seen as able to combine the small-scale enterprises' empowerment with the growth of a network. For this reason, this form of affiliation-based replication strategy might be correct for the enterprises (in Italy, farmers, cooperatives and associations) involved in pathways of social farming.

Secondly, there are several reasons to explain why a social franchising approach might be attractive to social farming. For example, it:

- shares social and economic goals (social impact, economic sustainability);
- works through partnership and for mutual benefit, under common identity and values;

The principles that might be followed in the construction of the model of social franchising are three:

- facilitate and speed a collective process of knowledge creation starting from existing experiences;
- create a community able to interchange knowledge and values between members (franchisor and franchisees);
- manage a network which develops a common language and reinforces good practices.

Starting from such reflections, the University of Pisa and AICARE have worked and developed the IBF (I Buoni Frutti) experience. IBF is a project of social franchising to support the growth of social farming in Italy. Officially IBF started in 2015 and its design has been based on existing sustainable practices of social farming and the codification of guidelines and procedures for its recognition at local level defined during 10 years of action research activities driven by Pisa University with local public and private stakeholders in different areas. Currently in Italy there are 7 approved franchisees and other realities interested are getting into the franchise system.

The key attributes defined in the project are:

- shared values, knowledge and resources;
- definition of a common brand (IBF);
- a social franchisor who replicates the business model
- independent social franchisees like project-holders and territories.

The franchise system provides some services supporting the franchisees in marketing, selling, training, planning social farming activities and their interaction with local public health services.

Several steps are needed in order to use the brand IBF: the franchisor realizes a check up visit; the franchisee accepts a project (defined by the franchisor). Thus, it starts the transfer of knowledge with a training and support activity. The franchise and the franchisor sign a franchise contract and the franchise can use the brand. The franchisor provides to the franchisee the brand IBF, implements the activities of communication and promotion and makes checks about the ability of the franchisee to maintain brand.

CONCLUSIONS

In conclusion, in light of its conceptual and operational framework (definition, objectives, benefits, actors involved), social franchising can be qualified as a tool, able to facilitate social innovation in agriculture, which can:

- speeds up and facilitate the start-up of innovative businesses;
- ensures a fast grow of the innovation, reducing the use of resources;
- facilitates a larger impact on a national scale.

It brings a number of benefits associated with a certain degree of codification of knowledge. The level of codification provided by the franchisor (that defines an operational guidelines) has to be enough flexible to meet the franchisees' needs of innovation. In such perspective IBF organize a network in which experiences and knowledge may circulate into a common language. The IBF system is in the start up phase, and its progressive application will give the opportunity for further reflection regarding the social innovation processes in agriculture.

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The social farmer as a shared value creator: creating new business models with the Impact Driven Business Modelling tool

Nicky Dirkx, Pol Bracke, Tom Van Wassenhove[1]

***Abstract* – In a multidisciplinary team consisting of agricultural and orthopedagogical researchers, as well as experts in entrepreneurship and strategic management, we did 29 in-depth interviews with socialfarmers in order to create a profile, to determine success factors and to explore innovative business models. The results show seven success factors, including entrepreneurship, innovation and management skills. Social farmers can be considered as social entrepreneurs who often have a well thought-out vision. However, due to a lack of knowledge about economic issuesand strategic management, their business model often lacks consistency and stability. Three of the interviewed socialfarmers participated in a course, coordinated by the multidisciplinary research team. A multidisciplinary team of students was involved as well. In order to create a business model that guarantees the balance between social and economic value creation for each of the three cases, we employed the *Impact Driven Busi-ness Modelling Tool* (Bracke & Van Wassenhove, 2015), specifically designed for social entrepreneurs to integrate both social and economic objectives, impelling them to think about goals, business concept, resources, stakeholders and partners, processes and policies and eventually the social impact they bring about. The social farmers were challenged by the mixed student-researcher team to reflect on every aspect of the IBDM-tool in an innovative way. The final result was a nicely integrated business plan for the three cases.**

***Keywords* – social farming, business modelling, social entrepreneurship, student involvement.**

INTRODUCTION

Within the scope of our research, we aimed to define socialfarming, which is scientifically underexposed in Belgian academic resources, in a clearer way. Since the increasing success of socialfarming, its profes-sionalism surely is made necessary. By the output of the research project, we wanted to provide the farm-ers with professional support and advice in order torealize their plan and to prevent starters to pull out before the start. Social farmers can be regarded as social entrepreneurs providing assistance in an inclusive, dynamic and creative way and offeringa possible solution to budgetary problems in the social sector. However,finding a balance between economic and social value creation,is quite a challenge for them. Due to a lack of knowledge about economics and strategic management, their business model is not alwayswell developed. A good understanding of how to create value is indispensable for each entre-preneur. However, the additional complexity of a social enterpriselies in the anchorage of the social orientation in economic activities and strategies. If this anchoragefails, the social policy can become an obstacle to the economic activities. A well-designed business model is a useful tool to avoidthis risk.

METHODOLOGY

We did 29 in-depth interviews with socialfarmers across Flanders, Belgium. Three of them participated in a course, coordinated by a multidisciplinary team, consisting of agricultural and orthopedagogical re-searchers, as well as experts in entrepreneurship and strategic management. A multidisciplinary team of students was involved as well. The cases were chosen based on the specific questions and needs of the in-terviewed farmers. In order to create a business model that guarantees the balance between social and economic value crea-tion for each of the three cases, we employed the ***Impact Driven Business Modelling Tool***. This is a method which is specifically designed for social entre-preneurs to integrate both objectives, impelling them to think about goals, business concept, resources, stakeholders and partners, processes and policies and eventually the social impact they bring about.

In mixed teams, students and researchers had brain-storming sessions and reflected on the different itemsof the IBDM. Results were frequently submitted to the farmers who gave feedback, what could lead to some adjustments. Students and researchers visited four social farms in the Turin region to become inspired by successful Italian cases. Inspiring aspects gained from this experi-ence were also integrated in the final business models.

RESULTS

The social farmers were challenged by the mixed stu-dent-researcher team to reflect on every aspect of the IBDM-toolin an innovative way. They started to in-volve the neighborhood, cooperate with stakeholders, designed a logo for marketing reasons and devised activities for children. The final result was a nicely in-tegrated business plan.

The researchers could list up difficulties and possibil-ities of the IBDM. The data from the course were com-plementary to the data from the in-depth interviews.

The in-depth interviews revealedseven key success factors of social farming: entrepreneurshipand stra-tegic management, design thinkingand innovation, partnership, evoking development opportunities, providing an ordinary context andenabling to perform meaningful work.The IDBM incites to take all of these key factors into consideration, be it implicitly or ex-

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plicitly. An obstacle in this matter is the fact that the social factors, unlike economic factors, sometimes are hard tomeasure, becausesomeare implicit and/or only noticeable on the long-term, which resultsin difficulties to define indicators of social impact.

The social farmers who showed an innovative attitude, were able to benefit from the IDBM the mostby gaining more and realistic ideas.

The students developed essential skills like collabora-tion, communication, reporting in a professional way, receivingand giving feedback and dealing with deadlines. They dealt withthe emancipating and connect-ing power of social agriculture and became acquainted with the Italian discourse concerning social farming, which isfocused onsocial inclusion and thereintegration of socially excludedpersons through la-bour on farms (Dessein et al., 2013). Above all, because the teams were multidisciplinary, the studentswere forcedto approach the cases from a cross sectoral point of view and perspectivesdiffer-ent from their own background and discipline

CONCLUSION

The Impact Driven Business Model is a useful tool for social farmers to reflect on influencing factors in social entrepreneurship. Whereas governments undeniably are limiting their financial support increasingly,a hybrid revenue model becomesinteresting for farmers who want to create both social and economic impact. The model is applicable for starters as well as for experienced social farmers to support them in taking every important aspect of their social enterprise into consideration.

However, in order to monitor the goals, policies and activities and to measure the social impact, a second-ary tool is needed and further research on the imple-mentation ofthe business plan is required.

The composition of a multidisciplinary team has demonstrated its value in many ways. The viewpoints were complementary and innovative by looking at thetopic from different point of views.

Social farmers are therefore advised to let them be supported by asimilar monitoring team, advising them on several topics, in order to keep the balance between social and economic value creation.

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A horticultural therapy program using hydroponics for improving work adjustment skills in students with mental retardation

Park, S.A., Joo, B.S., Son, K.C.[1]

***Abstract* – The objective of this study was to determine the effects of horticultural therapy program using hydroponics on work adjustment skills of students with mental retardation. Fourteen 1st and 2nd grade students with intellectual disabilities were participated in this study from a special education class in a high school, Inchon city, South Korea. Based on the critical role transitional model and special education curriculum for agriculture, especially hydroponics, a 22-session horticultural therapy program using hydroponics procedure for Lettuce (Lactuca sativa L. 'Asia Heuk Romaine') was designed. The students with intellectual disabilities participated in the horticultural therapy program for 4-month from September to December of 2011 (twice a week, average 60 minutes per session) and a farm for hydroponics in Inchon city, South Korea was offered for this program. Before and after the horticultural therapy program, the McCarron assessment neuromuscular development, emotional behavioral checklist, interpersonal negotiation strategies, and KEPAD picture vocational interest test were performed by the teachers and horticultural therapists. As the results, the students significantly improved motor performance (p = 0.002), emotional behavioral strategies (p = 0.00), and interpersonal negotiation strategies (p = 0.05). However, there was no significant difference between before and after the HT program for vocational interest was observed.**
***Keywords* – social farming, vocational training**

INTRODUCTION

People with mental retardation have various problems such as lack of concentration, excessive behavior, anxiety disorder, and personality disorder. Also, they tend to suffer from low self-esteem, self-regulation, and difficulties in relationships.A job is a decisive factor in shaping the life and life style of people which making jobs inseparable from the lives of people. This is no exception for people with dis-abilities (Kang et al., 2009).However, it is reported people with disabilities have lower adjustment rate to jobs and higher turnover relative to people without disabilities.Work adjustment is the process of modifying the individual or the environment to resolve, change or remedy issues for people with disabilities in carrying out their roles at work successfully (McGowan and Porter, 1967).

According to the critical role transitional model (CRT), through appropriate training and treatment, the workers could become more functional. In order to resolve common issues experienced by clients, psycho logical problems and environmental factors are classified and defined in four stages (preparation, learning, growth and job preparation). In particular, this model enhances their attitude regarding job and confidence by providing systematic and detailed process of change to people with disabilities (Kang et al., 2009).

Hydroponics refers to 'the process of cultivating plants by artificially supplying nutrient solution dissolved with the appropriate concentration of inorganic nutrient essential to normal growth and development without using soil' (Lee, 1988). It has the advantage of enabling women, elderly people, people with mental and physical disabilities to participate. Moreover, most of the work are simple and uncomplicated for people with intellectual disabilities or autism making it ideal for developing jobs and vocational rehabilitation.

Therefore, this research examined the impact of horticultural therapy (HT) program using hydroponics procedure for lettuce on improving work adjustment skills such as neuromuscular, emotional behavior, relationship strategy skills and interest in jobs of students with mental retardation(Joo et al., 2012).

METHODS

Participants:14 students with mental retardation (male 10, female 4) enrolled as freshmen or sophomores at I.H. Special School located in K district in Incheon, Korea were participated in this study. The average age of the participants was 20.9 ± 1.1. Research environment and period:The HT program was conducted at I.H. Hydroponics Center in K district, Incheon which was located close to the special school which the students attend. It is a specialized farm producing various functional vegetables through deep flow technique in an automated greenhouse (total area of facility 7.260, 13 combined scale). The program was conducted for an average of 60min each session, twice a week from September to December 2011 as practicum of an education curriculum.

HT program using hydroponics:The HT program using hydroponics with lettuce (Lactuca sativa L. 'Asia Heuk Romaine') (total 22 sessions) was developed based on CRT model and economical crop section of the agriculture course in the 7th Special School Vocational Education. All 22 sessions were composed of tasks related to hydroponics related to lettuce. Each session was conducted with therapeutic objective to enhance gross & fine motor skills, emotional behavioral skills, relationship and interest regarding work. In other words, each session was composed of tasks related to therapeutic objective.

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Evaluation:In order to measure the impact of the HT program using hydroponics with lettuces, tests on all the participating students were conducted regarding neuromuscular muscles, emotional behavioral, relationship skills and interest on job before and after the program. Korean(K)-MAND which standardized McCarron assessment neuromuscular development (MAND), a sub-tool of the McCarron-dial system (MDS) (McCarron, 1997), was used to assess the changes in the neuromuscular skill changes of students with disabilities. In order to assess the changes in the emotional behavioral skills of children with disabilities MDS emotional behavioral checklist (EBC) was used (McCarron and Dial, 1986). To assess the changes in the interpersonal strategy skills of students with disabilities, interpersonal negotiation strategies created was used (Kwon, 1988). As for the evaluation of job interest of students with disabilities, KEPAD pictorial vocational interest test (PVIT), which was developed to be used in Korea, was used to assess people with intellectual disabilities with limited intellectual & communication skills such as understanding sentences and learning disabilities (Kim et al., 2003).

Data analysis:Wilcoxon rank test using SPSS 19.0 version was conducted on the students who participated in examining the changes of K-MAND, emotional behavioral observation scale, and pictorial vocational interest prior to and after the program.

RESULTS AND DISCUSSION

Impact of HT Program on Motor Skills(Joo et al., 2012):There was a meaningful difference in motor skills before and after the HT program based on K-MAND which is a subcategory of MDS (P=0.002). According to the changes by each motor factor based on gross and fine motor skills index value before and after the program, the values showed statistically meaningful increase in continual adjustment, muscle strength, integration of motor senses, and agility of both hands. Most of the horticultural activities in the hydroponic cultivation program required medium intensity in using both the upper and lower body. Each activity which consisted of a series of or repetitive movements using the whole body with weighty tools or materials, is deemed to be effective in improving gross and fine motor skills, hand functions, balance of posture, range of motion and tilting pelvis.

Impact of HT Programon Emotional Behavioral Skills(Joo et al., 2012):According to EBC, which is a subcategory of MDS, HT program using hydroponic is effective for the emotional behavioral skills of students with mental retardation. Regarding the scores of each subcategory, there were statistically meaningful improvements after the HT program for impulsiveness-unmet needs,insecurity, socialization, aggressiveness, lack of reality excluding depression-shrinking, and self-concept.

The Effect of Horticultural Therapy Program on Interpersonal Relationship(Joo et al., 2012):The results reveal that horticultural therapy using hydroponics is effective (P=0.05). Apart from level 0 (not being able to appropriately understand the self and others regarding a concrete problem situation and level 1 (unilateral level with self-centered needs), after the 22nd session ofhorticultural therapy there were improvements for level 2 (mutual-beneficial level being able to understand the position ofcollea-gues beyond self-centeredness) and level 3 (mutual cooperation level being able to understand the process of others).Furthermore, the overall interpersonal strategy ability enhanced with statistical significance. In the horticulturaltherapy program using hydroponics, most jobs were carried out jointly through cooperation such as cleaning beds, transplanting and planting, harvesting and packaging the harvest, and transporting packages. In such a group, collaborative jobs give positive impact on considering the position of colleagues beyond self-centeredness (level 2) and understanding theprocess of others through cooperation (level 3).

Impact of HT Program on Job Interest(Joo et al., 2012):Comparing the result of the impact of the HT program on job interest of the wholegroup, there were no significant differences before after the HT program.

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Stagio…cando con Network Contacts. Stare bene insieme nelle diverse stagioni della vita. Can be resilience a key issue for care/social farming validation?

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***Abstract* – World Health Organization (WHO) identifies one of the factor in natural environment that contribute to the state of health of a person (Di Iacovo, 2011). It can represent an important protective factor for the promotion of the psyhophysical well-being and the resilience's develop. This ability is precious when there is a critical condition such as chronic and oncological disease in childhood because both of them are at the origin of severe emotional stress. In this cases, it's possibile to borrow from social farming some interventions of health promotion, for maintening or promoting the sick child sociality and mental abilities and to encourage education. In this theoric frame apulian association "Beppe Valerio Onlus", for the prevention and treatment of renal diseases in childhood, with the scientific collaboration of the Psychology Service and Nephrology ward of the Pediatric Hospital Giovanni XXIII Bari and funded by the company "Network Contacts", started in 2014 the project "Stagio...cando con NetworkContacts. Stare bene insieme nelle diverse stagioni della vita". Currently it is in progress a second phase of the project which explores issues related to the cultivation process of food products and a healthy diet. The entire project has the goal to offer a global pediatric care to sick children (kidney disease, epilepsy, hemophilia, oncology) and to families aiming at the promotion of protective factors and resilience through exploration, sharing and natural environment knowledge. In this paper it will be described the results of the approval's ratings filled out during the first phase of the project.**
***Keywords* – Chronic disease, resilience, social farming**

INTRODUCTION

Disease represents an extremely stressing event. When associated to a chronic condition, it can cause a distortion in self and body perception while in case of an oncological aspect it forces death's theme. Disease in childhood, with the eventual hospitalization, can prevent the incentive to autonomy and the need to identify with peers(Iacchia, 2014) interfering with the success of growth's process and personal identity's construction (De Carlo, Senatore Pilleri, 2012; Bertolotti, 2013). Though, an improved cultural perspective overtakes the dichotomy between health and disease, recognizing them as extremes of a continuum (Antonovsky, 1987). Health and diease may metaphorically represent "life's seasons": such as cold winter originates a fertile spring, so imposed pain and limits originate a strength and maturity which scientific literature calls "resilience". Resilience is the ability to cope with stressful events, to overcome them and continue to grow increasing one's own resouces. (Malagutti, 2005)

Among constitutive elements of resilince's processes we can identified individual factors (disposition, self-esteem, self-efficacy, internal locus of control and coping skills) and factors attributable to the close and extended social community (the presence of significative reference figures and the availability of supportive social networks) (Tede-schi& Kilmer, 2005). In the last years, natural environment has played a central role in promoting health and psychological well-being especially in childhood. The positive relationship with nature belongs to the extensive repertoire of protective factors, predictive of the development of effective coping strategies and resilience. Many studies concerning young people and their relationship with nature reported a higher level of focused attention and better coping strategies in response to stressful life events, a reduction of Attention Deficit Hyperactive Disorder symptoms and lower levels of depression (Faber Taylor et al., 2004;Maas et al., 2009, Cirulli et al., 2011). Recent studies discovered that "green exercise" (the synergistic effect of engaging in physical activity and at the same time being in contact with nature) results in a significant increase in self-esteem (Pretty et al., 2007; Hine et al., 2008). Social Farming thus becomes an opportunity to develop and to increase the individual and social resources that allow the individual to integrate its own resources with limits and to understand that adverse experiences can be revised as an opportunity for personal growth. The project "Stagio..cando con Network Contacts. Stare bene insieme nelle divse stagioni della vita" proposed by "Beppe Valerio Onlus" with the scientific collaboration of the Psychology Service and the Nephrology ward of the Pediatric Hospital Giovanni XXIII, funded by "Network Contacts" (Molfetta - Ba) was conceived with this framework in mind. The initiative is part of the Humanization Program of pediatric care, which started in 2004 by A.Re.S. and the Psychology Service of the Pediatric Hospital Giovanni XXIII. This project started in 2014 has the objective of pursuing a global pediatric care which pays attention to psychosocial needs of childen and it is able to promote protective factors and resilience. In this paper the activities carried out during the first phase of the project will be described and approval ratingswill be presented. Currently a second phase of the project called "Stagio..cando con Network Contact. Saperi e sapori per stare bene insieme" focused on the process of production and plantation of farming products and on the promotion of a healthy nutrition linked to therapeutic dietsis in progress.

METHODS

This project was realised with the collaboration of different actors:

- "Beppe Valerio Onlus", leader association in the organization of different activities;

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- the Psychology Service and Nephrology ward of the Pediatric Hospital "Giovanni XXIII" – Bari contributed to the objectives and methods;
- Local Associations: AICE Puglia (Associazione Italiana contro l'Epilessia), APLETI (Associazione Pugliese per la Lotta contro le Emopatie e i Tumori nella Infanzia) e A.B.C.E (Associazione Bambini Coagulopatici ed Emofilici ONLUS);
- the company "Network Contacts", sponsor of the project.

The project involved four meetings to which took part approximately 33 children and teenagers (belonging to various associations) together with some family members for a total of 100 people and other healthcare workers.

Touring routes:

- "Primavera a caccia di farfalle" - May 10, 2014: children had the opportunity to explore the forest and the animals and they were guests of a farm; they ventured into activities of sowing and harvest.
- "Estate sull'onda dell'avventura" - July 5, 2014: children had to deal with various paths on trees, putting courage and a bit of imprudence overcoming their limits.
- "Cavalcando il divertimento… in attesa dell'autunno" - September 13, 2014: children were guests of an entertainment center where they could jump from one carousel to the others.
- "Si va in scena … in inverno" - October 17, 2014: a theatrical show at the pediatric hospital realised by "Granteatrino. Casa di pulcinella".

This project included an exhibition-contest "Le mie stagioni: in un clic o a colpi di matita" in which children and teenagers took part showing a drawing and/or a picture of the season that best represented them. The exhibition-contest was organized on novembre 2014 in Bari, with the collaboration of Ospital School "XXVI Circolo Monte San Michele", during the The International Day of the Rights of Children and Adolescents.

RESULTS

At the end of each day, children were asked to fill out an approval rating questionnaire. Through the use of emoticons indicative of answers such as "good" "so and so" and "bad", we wanted to measure the quality of emotional tone experienced during each day and the opinion on the activities, playing moments and sharing moments.The histograms show a very positive judgement of the experience. Especially the interaction in natural contexts (Walk in the woods, path with animals) had a superior appreciation confirmed by the highest consent received by the first day to the farm (100%). Here socialization's moments obtained the best results for both emotional quality and the overall experience (100%).

Table 1. Approval proposed activities

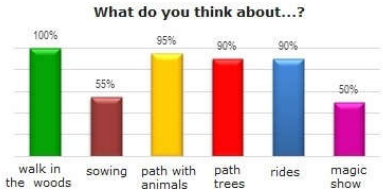

Table 2. Socialization and sharing moments

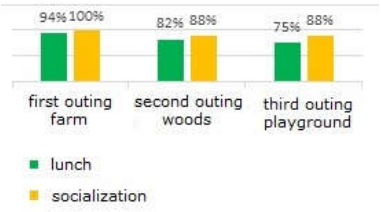

Table 3. Overall satisfaction with excursions

CONCLUSION

The first the first phase of the project received high approvals by partecipants and this confirms that activities such as exploration, sharing and knowledge of natural environment may contribute building a representation of the disease through positive elements. We hope to get the same results even with the second phase of the project. Borrowing educational and social-recreational aspects and the attention to quality of life from social farming is an important resource for the empowerment of protective factors. International scientific community claims to adopt the perspective of "Health Promotion" in the chronicity supporting the empowerment of personal resources and protective factors especially in childhood.

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Building a typology for the Green Care services in Finland

Elina Vehmasto, Katriina Soini[1]

***Abstract* – Building a common understanding and vocabulary for the services utilizing the green environment has been a long term collaborative learning process in Finland. Green Care concept was introduced by the researchers in mid 2000's and it has emerged interest among variety of stakeholders. The concept soon became a broad umbrella concept, which could be considered as a boundary object under a constant negotiation, and a need for more detailed concept was evident. A typology of Finnish Green Care services was built with the help of systematic analysis of different dimensions of the services. Besides a detailed categorization of the services, the two main types of the services were identified: Luontohoiva and *Luontovoima*[2]. In general, the typology has been received well by different stakeholders and Luontohoiva and Luontovoima are now widely used concepts in Finland.**

***Keywords* – Green Care, nature based wellbeing services, typological analysis.**

INTRODUCTION

In Finland the concept of Green Care has emerged interest among a variety of stakeholders (the rural research, education and extension organizations and rural entrepreneurs) since its introduction in 2006. Consequently many Green Care projects have been launched across the country during past decade. At the same time it has been a great challenge to achieve a mutual understanding over the consistency of the phenomena through the concept. In Finland there was an agreement from the very beginning to include in to the Green Care all nature-based wellbeing services, not only social farming, as it has been the case in some other European countries.

The Finnish researchers have conducted formative interventions for evolution of Green Care concept (Soini, 2014). Their work has been influenced by the international discourse on the topic (COST 866 Green Care in Agriculture; Social Farming community of practice), and later on by a number of Finnish research and development activities in the field. In this sense the concept evolved as a result of transdisciplinary and collaborative learning process.

Following a number of joined workshops, meetings, discussions and research activities, a common understanding of the key elements of Green Care were identified: 1) natural environment or animals, 2) activities, and 3) community. The composition of these elements as well as their relative importance in each of the services may differ. However, the natural environment in form or another is always needed. Furthermore, three preconditions of the Green Care services were set, as any activity taking place in green environment cannot be called as "Green Care" service (Sempik et al., 2010): 1) professionality of the service provider in respect to the service/treatment given (e.g. only trained therapist gives actual therapy), 2) goal orientatedness referring to jointly agreed personal wellbeing targets of service), and 3) responsibility in respect to e.g. the environment and animals used in the activities, and staff. (Soini et al., 2011; Soini & Vehmasto, 2014.) The first set of quality recommendations were developed based on these three principles (MTT, THL & Lapin AMK, 2014).

Following this definition Green Care is currently understood as a wide umbrella concept for the services using nature-related methods and utilizing forests, gardens, farms, and water environments in the social, health and wellbeing services and education for various client groups, targeting for different aims (care/ rehabilitation/empowerment/education). Given the huge variety of services, a more detailed concept description was needed. Internationally some classifications were already developed for example for social farming (Di Iacova, 2009; Hassink, 2009; Haubernhofer et al., 2010), but these typologies focused either on methodology or institutional environments. Furthermore, many developed typologies are country dependent.

METHOD: TYPOLOGICAL ANALYSIS

In the study a typological analysis was exploited as a method. Typological analysis is a strategy for descriptive analysis whose goal is the development of a set of related but distinct categories within a phenomenon that discriminate across the phenomenon (Ayres & Knafl, 2008).

At first different type of Green Care services were placed in to the categorical matrix organized by two dimensions: 1) service type (care/ rehabilitation/ social pedagogy/ wellbeing etc.) and 2) goal of service type (Fig 1.).

Secondly, other key features of services were identified: client types; service providers and their professional requirements; buyers of services; role of public authorities and regulatory environment (laws and quality requirements). The service types set to the matrix were analysed in respect to the other dimension. Finally, the sources of commonality and variation for patterns of similarity and differences were explored and the final categories defined.

During the analysis the first draft of the typology was presented in a dozen of seminars and workshops for practitioners, representatives of extension and educational organisations and researchers. The analysis was further developed by the feedback given by the different groups.

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The second author is Adjunct Professor, PhD, Principal Research Scientist at Natural Resources Institute Finland, katriina.soini@luke.fi.
[2] The Finnish concepts Luontohoiva and Luontovoima are refering to the two different major groups of nature based wellbeing services, explained later in the paper.

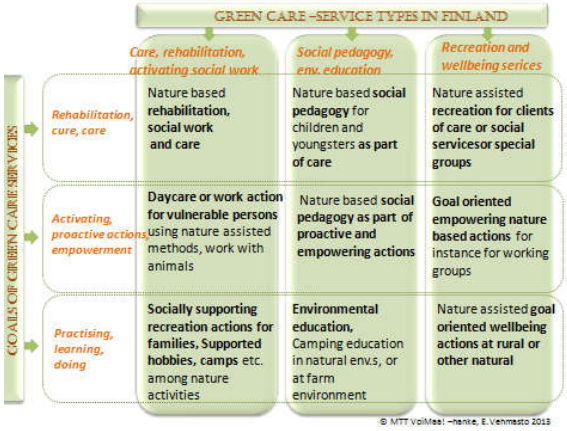

Figure 1. Typology of the Finnish Green Care services. The upper left corner is representing type of services with the most intensive goals. The down right corner is representing the least intensive services with lightest intense of goals.

RESULTS

The analysis revealed two major service groups: *Luontohoiva* and *Luontovoima* (See Fig 2.).

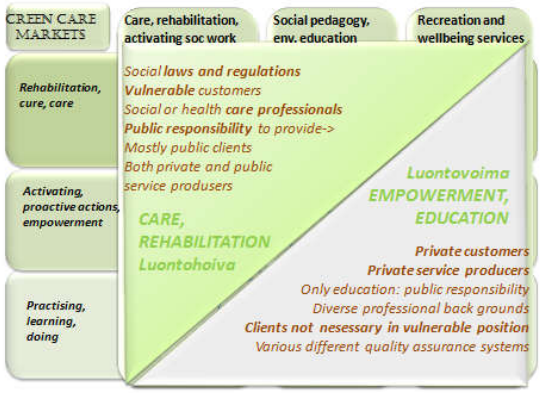

Figure 2. The two main categories of Green Care services in Finland: Luontohoiva and Luontovoima.

The two groups of main service types represent two kinds of markets for exchanging of the services. *Luontohoiva* services are services, whose production is under the responsibility of and usually also financed by the public sector. The public sector can produce these services as their own activity or buy them from the private sector (from enterprises or NGOs). *Luontovoima* services are services, whose are usually not under the responsibility of the public sector. Also most of the buyers of these services are private people or private organizations.

DISCUSSION

The typology developed for Finnish Green Care services and introduced for the stakeholders has proved to be useful for the service providers, who have discovered the place of their service in the multiple field of Green Care. Also the distinction of the services in to the two main categories seems to work well.

Although the distinction between *Luontohoiva* and *Luontovoima* is somewhat blurred and the same enterprise/institution may provide both types of services, both of them need special type of institutional, regulative etc. arrangements. Consequently, the categorization and the two main types make the policy design and promotion easier, when the discussion on different services types is more focused.

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Social farming and social innovation in the perspective of new rural policies

Francesco Di Iacovo, Roberta Moruzzo, Cristiano Rossignoli[1]

***Abstract* – Social farming is an emerging practice at EU level and worldwide. It might be considered as the result of a process of social innovation, able to mobilize actors and resources for the provision of innovative services, but also to organize a diverse relationship among enterprises with public and third sectors. In Italy the concept is based on a deep subsidiarity communitarian model based on coproduction and civic economy. Here the transition process implies a long process of knowledge brokerage that might be supported with innovative policy tools offered by the 2014/20 RDP. The paper analyses the process of Social Innovation in Social Farming in Tuscany in relation with the first application of the new rural policies. It offers new insights about the links among innovative process and the use of supportive tools.**

***Keywords* – social farming, knowledge brokerage, rural policies, transition, social innovation, boundary objects.**

INTRODUCTION

Social farming (SF) is a nature based solution using plants, animals, time-set and spaces in agriculture and it's an innovative practice differently organised at EU and the world scale according with local needs, cultures, institutions and resources (Di Iacovo et al., 2009). SF links agriculture with a broad range of sectors (health, social affairs, education, justice), related competencies, diverse rules and policies related to the sectors involved. SF engages agriculture with other fields of knowledge in a trans-disciplinary (Gibbons et al. 1994) and multi-geographical (urban/rural) dimension. SF mobilises resources from agriculture to meet local emerging social and economic needs and can be considered as one of the most relevant form of SI in agriculture. It's well known that SI is one of the main pillar of the EU 2020 strategy and that all EU policies are translating it into policy tools. In rural policies (RDP) it finds application by the way of the so-called innovation partnership and operational groups (OG). Their main task is to broker knowledge between research bodies and private and public actors in the perspective of a radical innovation.SI in SF can be described as a transition process (TP) (Geels et al., 2007, Loorbach et al., 2010) involving a plurality of public and private actors in a process of knowledge brokerage that moves across a multilevel institutional dimension (from local to national/EU levels) (Di Iacovo et al., 2014). During such a collective process, isolate innovative initiatives are able to growth, to contaminate a broader range of stakeholders and territories and to move toward their recognition. During such TP public and private actors share their interests, create a new collective knowledge able to integrate competences, values, attitudes and strategies into shared goals, procedures and rules able to better match with a changing landscape. This is particularly true in the Italian case where SF is not always organised to provide innovative services into the frame of the State-Market division) but in a more innovative communitarian welfare perspective able to over-came the fiscal crisis of the State (Stephenset al., 2008) and to mobilize multifunctional agriculture. Two main SF model scan be classified like:a soft subsidiarity specialised model based on State intervention and direct economic recognition of innovative services provided by diversified farms; a deep subsidiarity communitarian model based on the co-production of economic and social values,the organisation on collaborative networks among diverse stakeholders, the promotion of ethical products and civic economy. Each SF model has diverse outcomes and implies a diverse path for innovation that can be analysed according withTP and the boundary objects (BO)(Benn et al., 2013). BO are artefacts and concepts able to attract, connect, develop interaction and create a common identity among many actors convening into a new arena where to co-design strategies and knowledge in the perspective of innovative solutions. Starting from the Italian situation and the results of a action research (AR) (Lewin 1958)[2] process started in 2003 in Tuscany and still on going, the paper focuses on SF as SI and its TP in the light of new tools defined in the frame of RDP 2014/2020.

METHODS

Since 1999 the Pisa' research group (PRG) focused its research on infrastructures for social development in rural areas and it was involved in AR still active today[3]. A process of SI was leaded to facilitate the exchange of knowledge and to better codify SF at regional level stimulating the organisation of a new governance among stakeholders involved. SF gained progressively interest at regional and national level and the PRG was progressively involved in a growing network of public/private actors and practices. This was also the case with the application of RDP 2014/20.The new RDP, supports SI processes aiming at designing innovative and effective solutions in many areas of interest stimulating the organisation of operational groups (OG) and activities of knowledge brokerage (KB) (EU SCAR 2012) among actors. When this abstract was submitted, in Tuscany the timeline of the selection procedure of the OG was organised into 3 steps (call for proposal end of April, call for OG on selected topics end of July, support to the selected OG end of September). The first call collected 370

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[2] AR is normallyfocused on embedded researchers participating in learning processes able to arrive to specific solutions.

[3] Following the ARactivitiesin 2002 the SF concept was introduced in Italy after a survey organised in Tuscany with the snowball methodol-ogy that gave evidence to 60 existing -still un-recognized- SF projects run by social/agricultural cooperatives and farmers. The PRG contin-ued its RA in diverse territories -at municipal, province and regional level- creating evidences in SF, analysing the transition process and designing tools and supportive paths (Di Iacovo et al., 2014).

proposals on all agricultural topics. Such a success delayed the following steps. End of July the second step was not yet planned. The SF project-holders saw the OG as a useful support for their action. About 6 proposals from 5 different areas focused on SF, and in 5 of them PRG was involved. PRG organized 5 local focus groups (FG). In each of them, according with the local level of understanding of the SF concept, public and private stakeholders took part to share the SF concept, the possible roles for the OG, the main local BO. A Regional FG with some of the actors involved at local level was also organised to share diverse positions and to build a common BO with possible complementary actions. Evidences presented in our paper are the outcomes of such activity.

RESULTS

The results will be presented according with three keys: the organisation of locally defined towards a regional BO object in SF among diverse groups; some reflection on the transition process of SI in SF; the role of researchers in the dynamic. During the 5 local FGs the composition of the actors involved was diverse according with the local state of the art of the debate on SF. In some areas just few members of the public health sector, third sector and farmer' association were involved (starting-up SF groups, in Pistoia and Livorno), in areas where the process was already well rooted, a larger number of local stakeholders was participating, including more associations, farmers and Majors (rooted SF groups). Perhaps in the rooted SF groups a strong process of knowledge brokerage took already place before the new RDP tools. Was the case of the Pisa area where the formal SF recognition started already in 2003 and progressively affected 3 health districts. In the Grosseto area - a deep rural one- the debate on SF started in 2008 but still with some asymmetry among local public and private actors. A 5thfocus group was organised with a regional farmer association pushed by their associated SF farmers active in the Lucca area. In all cases the discussion clarified the new tool (OG) as well as the SF concept (starting-up SF groups), before to define a specific BO able to catalyse the participants' interest. The OG was considered as an opportunity to define - or to consolidate - a transition arena on SF. The BO in Livorno and Pistoia mainly focused on the organisation of a local pilot initiative able to facilitate the knowledge exchange, to support some practice and to establish alliance among a growing number of actors. In Pisa the three areas managed to organize a common proposal based on the promotion of SF ethical products to reinforce the co-production of economic and social values still considered as weak. In Grosseto the BO focused on the opportunity to enlarge the number of innovative services in rural areas in time of public financial crisis. In the farmers association' proposal the BO was to support at regional level associated farmers to introduce SF practices from pilot initiatives to a broader range of actors. Ina 6th case a proposal was prepared by a second farmer association at Pisa level with the aim to facilitate diversification of didactical farms and it was de-linked by the already existing process.

CONCLUSIONS

Our results are provisional due to the delay in the RDP' process. Nevertheless we can underline few points. Diversity in the BO defined by all groups give evidence to the existing steps in the SFTP from small pilot initiatives to broader area and regional ones. In the 5 cases in which PRG was involved, different BOs were mediated in the perspective of the regional selection of one OG able to catalyse the attention on SF at Tuscany level. The regional BO defined a common path where the knowledge brokerage among areas, but also locally rooted initiatives based on diverse needs were merged. The process was facilitated by the action of a third actor like the PRG giving new insight about the role of research and trans-disciplinary research in SI. New RDP policies aiming at promoting SI might support SF transition processes, but there is still some question to be solved regarding the regional selection process of the overall proposals presented and the existing links between innovative paths and the traditional actors involved in the policy making, an aspect still not evident at this stage of the AR.

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Social farming practices to promote social-ecological sustainability in rural areas

Marina García-Llorente, Cristiano Rossignoli, Roberta Moruzzo, Francesco Di Iacovo[1]

***Abstract* – Currently rural areas worldwide are confronted with a spectrum of changes and a high vulnerability towards the environmental and financial crisis. New solutions and models are required to maintain ecosystem service and public services provision. Here, we present the key elements of social farming and ecosystem service approaches in rural areas and explore their potential association.**
***Keywords* – ecosystem service, social farming, social-ecological system.**

INTRODUCTION

Rural areas are hotspots of biodiversity and the source of most essential ecosystem services (ESs) demanded by both urban and rural populations. However, many ESs are not included in conventional markets and are invisible to institutions regulating their use and maintaining. The current human transformation of land cover have promoted the loss and abandon of most intangible ES, especially those involved in the regulation of ecosystem processes (regulating ESs) or those related with the spiritual enrichment, culture, recreation (cultural ESs) while farming intensification in the more productive areas is promoted for the maximization of ESs with market prices. So, rural areas and its ESs are vulnerable to global change consequences and to the predominant land use planning trends. At the same time, rural areas are characterized by a depopulation pattern, aging of rural communities and isolation, being vulnerable to the decline of public services (eg. health and long-term care services) caused by the financial crisis.

Under this context, neither public services (state/market public expenditures), neither public goods (in terms of ESs) could be assured, and new solutions and models are required to main-tain their provision. Some of these solutions are based on (1) looking for different sources of pub-lic services with an emphasis on the role of nature on human wellbeing, (2) rethinking the governance framework behind public services, uncovering the role of local communities and non-formal institutions on it. Social farming (SF) could be a good example of transition management and social innovation in rural areas tackling both aspects. In this study, we present the key elements of SF and ES approaches, exploring their potential association in order to preserve viable sustainable social-ecological systems in the context of global change, where public services and public goods could be guaranteed in rural agricultural areas. Finally, we suggest initial directions for future research.

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METHODS

The social-ecological system (SES) framework (Ostrom, 2009) proved useful theoretical and methodological opportunities to explore, describe and explain the complex relationships between biophysical and social systems (agricultural land and those ecological processes taken place on them) in the context of agricultural areas conducting SF. Under this approach we identify and characterize the supplied services (ESs and public services co-produced as a result of bio-physical and governance dynamics), the system's users and the governance system (characterized by bottom-up approaches and a community-based management) (Fig. 1).

RESULTS

ESs by agricultural landscapes with SF practices

The ES approach is deeply rooted on social needs and expectations, as by definition, ESs are recog-nized as such only when an ecological process is linked to a human demand. However, much research on ES is focus on their biophysical assessment or on the contrary on its economic value. New trends are supporting socio-cultural valuations and the recognition of the value-plurality of ES (Kelemen et al., 2014). On this respect, SF approach makes a clear connection between interactions in natural environments and human values beyond monetary metrics, as for example its contribution on health, social relationships, local identity, etc. The concept of SF is closely linked to the multifunctional agriculture model (Di Iacovo et al., 2014), which emphasizes that beyond its primary function of producing food; agriculture produce also a wide variety of services.

Governance

While some proposed solutions to manage agricultural ecosystems involve government regulation or market incentives; a growing number of approaches look for cooperative solutions (Stallman, 2011), as the case of SF where a community-based management and a bottom-up approach could provide and manage public services successfully. Latest ES literature on governance suggests that sustainable SES require institutional diversity (non-formal insti-tutions, legal institutions and market institutions) across organization scales (Ostrom, 2009; Gómez-Baggethun et al., 2013). In SF, attention must be given to different learning arrangements (e.g. multi-actor networks, territorial alliances).

Users inclusion, wellbeing and urban-rural link

The ES approach recognized that on environmen-tal planning there are different types of stake-holders with different degrees of dependence and influence. Being vulnerable those who stand to lose or gain significantly from the state of ES but who are not directly involved in decision making, such as non-associated farmers (Iniesta-Arandia et al., 2014).

There is risk to mask their participation on environmental management policies, under representing those less visible stakeholders. SF involves a branch of stakeholders with a special focus on vulnerable ones in two different ways. In one hand, the direct beneficiaries of these practices are disadvantaged people who have the possibility to be integrated in a living context where their personal capabilities are valued and enhanced. On the other hand, farmers are indirect beneficiaries as they could build new networks with consumers, involve more stakeholders in agricultural activities, enhance the image of agri-culture in society, and their own reputation and visibility. All this impacts could increase their empowerment, giving them voice in planning as well as engaging them in participation. In addi-tion, SF is a way, in some cases, to improve their economic activity with a diversification of their sources of income.

Regarding the impact of ecosystems on human wellbeing have remained unexplored, with the direct consequence on failing on its incorporation on environmental policies. The Millennium Ecosystem Assessment established clear relations between provisioning ESs and the wellbeing components of security, basic material for good life and health. In a similar patter regulating ESs are also linkage with health and security. However, the importance of cultural ESs in components such as health, good social relations, or freedom of choice and action are almost invisible (MA 2005). SF has significant potential to draw up these connections: social interactions, being part of a social community, self-efficacy, self-esteem, etc. SF can generate positive health-related benefits thanks to the contact with nature that is important to human beings also just for the fact that people can find relief from being in natural places. In addition, contact with nature has positive effects on well-being by reducing pre-existing stress-levels, facilitating social contact and providing opportunities for personal development.

CONCLUSIONS

If agro-ecosystems in rural areas are both providers and consumers of ESs, appropriate sustainable management practices can ameliorate many of the negative impacts of agriculture, while largely maintaining provisioning ESs. SF may offer innovative solutions to maintain the provision of public ES in rural areas.

At the same time this specific management practice can provide a range of other wellbeing and cultural ESs to human communities. For the future we call for higher cooperation between both disciplines to better understand the explicit connections between nature and human wellbeing, going from the biophysical system and ecological processes, to the explicit services supply, the institutional dynamics and the social needs. In fact the health, economic, socio-cultural and environmental values attached to multifunctional areas in rural communities should be considered effective arguments for its conservation.

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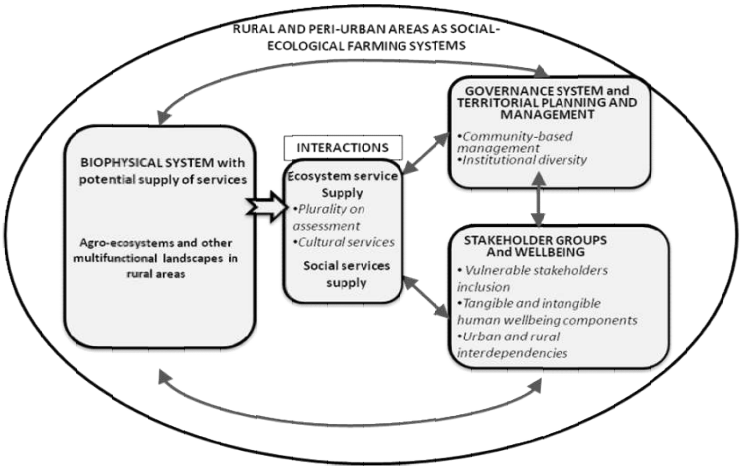

Fig. 1. Many examples exist of complex interactions between the components of a SES. Here below framework adapted for SF

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The right concept in the wrong place? The Interrelationship between Care Farming and Social Capital

Georg Wiesinger[1]

***Abstract* – A wide range of terms such as Social Farming, Care Farming, Farming for Health, Green Care in agriculture, etc. describe the diverse approaches utilising nature as a means for providing health and wellbeing services to vulnerable groups through structured and organised programmes on farms. Growing public awareness of the importance of nature for human health, on the one hand, and the need for sources of additional income for marginalised farms, on the other, are contributing to the swift development of farm-based social, pedagogical and care activities across Europe. New methods such as horticultural therapy or animal-assisted interventions are being applied to a variety of target groups in order to allow clients to perform meaningful activities and to improve their physical and psychological condition. The presentation will discuss the results of a comprehensive survey conducted in three Austrian case study regions. The findings suggest that policy makers should recognise local social capital more clearly as a key issue in the process of establishing new SCFs. After all, even the best concept can fail if implemented in the wrong place at the wrong time.**

***Keywords* – Social/Care Farming, Social Capital, Rural Development**

INTRODUCTION

SCF is understood as the use of agricultural enterprises and landscapes as a basis for promoting mental and physical health through farming activity, or the systematic application of therapeutic measures and interventions utilizing farm animals and plants (Hassink & Van Dijk 2006, Hine et al. 2008). Social farms – particularly when they deal with fringe groups such as drug addicts, people released from prison, migrants or homeless people – need to have a supportive social environment in order to be successful. The main challenge was to explore interfaces between farm enterprises and local social networks. In this regard social capital theory, which was initially proposed by Bourdieu (1986) and further elaborated by Coleman (1988), Putnam (1993, 2000) and others, might serve as an explanation for this reaction on the part of local communities. The concept of social capital seems to offer a suitable approach for gathering valuable background information on local tolerance and civicness.

SURVEY METHODOLOGY

The research design contains two different strategies. First of all *EUROBAROMETER Social Capital 2005*, a standardized questionnaire comprising 150 rating-scaled items on how democracy works in the community, neighbourhood, environmental issues (water and air pollution), public services (transport, education, health system, social housing), individual situation (current job, personal health and safety, family, friends, social life), networks and associational activity, civic and political life, trust and socialization, etc. was applied in three different case study municipalities. Each of these municipalities runs a different type of care farming operation: geriatric clients on farms in P. (Upper Austria, 1700 inhabitants), poorly qualified, long-term unemployed women, some of them with migrant backgrounds in N. (Lower Austria, 1450 inhabitants), and drug addicts in T. (Lower Austria, 1250 inhabitants). The strictly calibrated measuring instrument used in this study was generated by the EU Commission and addresses every inhabitant over 16 years of age. Its key benefits are the fact that significant differences between subgroups can be identified by means of chi-squared tests, and that the results can be directly compared with results from other EU countries.

Secondly, narrative interviews were conducted with experts and local stakeholders in order to gather valuable background information about the interrelationship between social networks and SCFs. Theoretical Sampling (Strauss & Corbin 1998), a circular approach based on Grounded Theory was applied for this qualitative study.

SELECTED FINDINGS

P. may be characterized as a remote municipality with a significant breakdown of local (mainly wood processing) industries, population decline, insufficient transport networks, commuting and outmigration. The amounts of economic and cultural capital (e.g. higher education) are quite low while social capital is still strong. But local clubs and societies are dominated by a small number of elderly males. Many of those hold powerful positions in several different organisations. Consequently, some subgroups, above all young people and women, are segregating from the traditional local societies but this does not mean that they are becoming socially excluded. On the contrary, they are building up their own strong networks of support amongst themselves.

N. is a peri-urban community with a growing population but narrow social networks. Social capital is gradually diminishing. Local clubs and societies are controlled by the old, established families. Newcomers do not get access or are not interested in participating in the traditional social networks. Economic capital (through the establishment of new industries) and cultural capital (through incomers' higher qualification levels) are flourishing. The results of the chi-squared regression analysis suggest that elderly people feel excluded or «unsafe» since the local environment (new industrial plants) and the social environment (new,

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unfamiliar people) is changing fast. Younger people can cope with this situation much better.

T. is the remotest and probably the most traditional community. In this hilly and mountainous region people live in dispersed settlements, many of them on isolated farms. There are strong ties amongst the inhabitants, indicating an extremely high proportion of social capital. The population is shrinking; the number of available jobs is limited. However, those who stay are well integrated within the local clubs and societies, regardless of their membership of subgroups, e.g. based on age or gender, whereas economic and cultural capital are both extremely low.

Municipality T. provides a fruitful environment for the reintegration of alcohol and drug addicts. Local people are very helpful and possess a high degree of trust and tolerance. Despite its low social capital, N. is dealing rather well with the long-term unemployed women. The anonymity resulting from low social capital provides good shelter as people take little notice of each other. Municipality P. is not very successful in integrating its geriatric care scheme. Social capital is not well balanced. There are several subgroups, or interest groups, who are opposing the scheme. This community's social capital may thus become toxic.

BREAKING THE SPELL OF SOCIAL CAPITAL

Local social capital may play a decisive role for the establishment of SCFs but its influence should not be overestimated. In general, social capital facilitates the utilization of local resources, both in terms of natural and human resources, via the creation of social networks, trust and civicness. But there are certain limits, as well as some negative aspects.

We also have to be aware of some dark sides to social capital. Social capital may cause the social exclusion of all those who are not able or willing to adopt the local norms. Furthermore, strong linkage within a closed community may bring about the rejection of incomers, innovation and xenophobia. Membership in clubs and societies says very little about the quality of civic participation. Some people may be members of several organisations while certain groups remain excluded (young people, elderly people, women, incomers, etc.). And finally, the thinning out of local infrastructure leads to a further decline in economic and cultural capital and, eventually, also to a decline in social capital.

Social capital cannot be considered a constant and stable feature: it is generally in a state of flux and transition. The structure of social capital has to adapt to new challenges and developments. New forms of collective organisation will have to emerge in response to new needs. The biggest future challenge may lie in understanding the policy structures and obstacles associated with integrating rural development in the context of a more regionalized and «programme-driven» system of government. The question may be framed in terms of how rural integration can be achieved as part of the new rural development paradigm. Social capital could be seen as a software package. It has to be installed on the hardware of functioning infrastructure and services if it is to facilitate successful rural development.

In referring to the planning process of SCFs we can draw clear recommendations that one should also recognize the given socio-economic environment and not only the organisational and technical features and circumstances for the implementation of SCF initiatives. Since sometimes even the best concepts will fail when carried out in the wrong place at the wrong time.

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Social Farming in Catalonia. Rural local development and social integration of people at risk of social exclusion

Antoni F. Tulla, Natàlia Valldeperas, Carles Guirado[1]

***Abstract* – Social Farming (SF) is a longstanding phenomenon in Europe, emerging mainly in the rural and periurban setting. In Catalonia, it has become especially evident within the last 10 years, due to the 2008 economic crisis. There are direct benefits from SF in terms of employment, education, training and therapeutic approaches at risk of social exclusion. It is important to assess the social return on public and private investments in this activity and evaluate its impact in areas such as local development and social cohesion. The present research is analysing the economic viability and social impact of a sample of SF projects, using two distinct methodologies: the CANVAS business model and social return on investment (SROI). The first attempts to provide guidelines for promoters of an SF initiative, from the emergence of the project idea to the creation of the enterprise. The second measures and quantifies the concept of value, incorporating costs and social, environmental and economic benefits. The study attempts to demonstrate how SF can be a profitable economic activity with an important social impact, while also contributing to better use of public resources and a more efficient system of social welfare.**

***Keywords* – Social Farming, CANVAS Business Model, SROI, Catalonia, Local Development, Social Exclusion, Social Cohesion**

INTRODUCTION

The SF concept has been described by many authors in the European context (Sempik, Hine, Wilcox 2010; Di Iacovo, O'Connor 2009; Hassink, Van Dijk 2006). However, with the exception of Italy (O'Connor, Lai, Watson, 2010; Di Iacovo, 2010), it has received limited research attention in South Europe (Guirado et al, 2014).

In the present study, SF is defined as a sector that includes a broad spectrum of activities that involve local agriculture-related resources and offer jobs, therapy, training and education to groups at risk of social exclusion, by which they can improve their personal health and well-being, social situation and empowerment, and that contribute to more socially and economically sustainable local development.

To classify the SF projects in Catalonia and build a research database, we have considered three main aspects that define the nature of SF projects: a) the project goals, b) the groups that benefit from participating in the project, and c) the activity carried out (i.e., agricultural or agriculture-related, production of goods or delivery of services). In addition, data are collected about the legal status of each entity, the modality of the involvement by groups at risk of social exclusion and the application of organic agriculture criteria.

To date we have identified 146 entities, of which 99 are engaged in SF activities and the remaining 47 in gardening or landscaping activities. We have included the latter group as a potential sector for SF expansion because we have observed that some entities engaged in this sector have undergone a change towards SF because of the economic crisis, particularly because of the decline in the construction sector. Most of the included projects are private entities, some of them non-profit foundations (22.2%) or associations (15.2%) and others private businesses (19.2%) or cooperatives (14.1%). Encouragement of SF by public administration is increasing but remains insignificant. Depending on the project goals, we have seen that most of them promote employment opportunities (62.6%), while others are designed to provide food for individuals with limited resources (10.1%), or education and training (7.1%). Most of the projects benefit people with a disability or mental disorder (41.4%), but as a side effect of the economic crisis other groups have been included, such as those living in poverty (24.2%), the unemployed (8.1%) and other socially vulnerable groups: the young, the elderly, women, children, prisoners, new immigrants, or the homeless. The most common legal structure for social and workforce integration of these groups are Special Work Centres (Centres Especials de Treball, 36.4%) and Supportive Employment Sites (Empreses d'Inserció, 15.2%). A large portion of these entities focus their efforts on agriculture (69.7%), particularly organic horticulture, and food processing (11.1%), with the majority applying ecological agriculture production practices in their farms and work-shops. Nonetheless, there are some projects engaged in other activities such as forest management and silviculture or services such as short supply chain product commercialization.

The main objective of the present research in Catalonia is to contribute to deeper understanding of the SF sector and to analyse the economic viability and social impact of SF projects, using two methodological tools: the CANVAS business model and Social Return on Investment (SROI). The specific objectives are to determine the changes generated by SF in the main groups of interest from a social, economic, and environmental perspective, on one hand, and demonstrate that SF is a productive as well as economically, socially and environmentally sustainable activity, on the other. One of our hypotheses is that SF initiatives contribute to more efficient use of public resources. Participation in SF projects by certain groups leads to less frequent use of health and social services, and therefore decreases public expense in

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this context. On the other hand, the appearance of SF initiatives generates important changes in the territory because they encourage sustainable local development, mainly in periurban and rural areas, while also contributing to social cohesion and minimizing environmental damage.

METHODOLOGY

Our study methods are focussed on three basic points: first, analysis of the elements that constitute an SF project in order to establish categories that will allow us to develop a group of recommendations designed to encourage SF; second, analysis of economic data and the CANVAS business model for various SF projects with the goal of evaluating their economic viability and identifying the determining factors and internal structure of the entity; and third, analysis of SROI. Briefly, CANVAS permits a quick visualization of how an entity develops its value proposition in order to reach its clients, how it delivers that message, and how it captures part of that value for itself. This tool helps an entity plan how the enterprise will serve its clients and how it will generate income. SROI shows how these projects contribute important social benefits and generate change in the individuals with whom they work, both directly and in the society as a whole. This model is a strategic planning tool that helps to show how each entity generates value in order to obtain a specific monetary value. This is useful in attracting social investment in a project and SROI is increasingly being used by public institutions and nongovernmental organizations as a mechanism for evaluation.

In order to achieve these objectives, our research design has 7 methodological phases. The first phase of methodological planning consists of three specific actions: a) acquisition of deeper knowledge of both the CANVAS and SROI tools; b) development of a guide for applying each of these tools; and c) research on the social, economic and environmental changes generated by SF activities. The second phase is to acquire a general knowledge of the SF entities, with the goal of compiling the greatest possible volume of information, which will allow us to develop a detailed description. The third phase is the beginning of fieldwork in order to complete the CANVAS model and define the first steps in applying the SROI tool. In the fourth phase, we will analyse the data obtained from the fieldwork for the CANVAS model, together with the initial SROI design. In the fifth phase, we will complete the second part of the fieldwork and continue developing the SROI; this consists of quantifying the changes produced by SF entities and assigning value to their impact. In the sixth phase, we will process all the information ob-tained in the second part of the fieldwork and finalize a first version of the SROI. Finally, in the seventh phase, as required by the SROI methodology, we will submit the data obtained for evaluation by the entity being analysed, with the objective of achieving the best possible SROI results.

CONCLUSIONS

These case studies will allow us to validate our initial hypotheses and clearly show how SF is an activity with an increasing presence in Catalonia and meets current needs in Catalan society, becoming a sector with a clear component of social innovation that offers economic viability and social justice, and in which investments deliver a return to society by way of different channels: health and social services, provision of services and infrastructures, environmental improvements, the growth of organic agriculture, and short supply chains ("farm to table").

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Effectiveness of social farming for people with special needs and mental health challenges: the case of the SoFAB Project in Ireland and Northern Ireland

Jim Kinsella, Aoibeann Walsh and Helen Doherty[1]

***Abstract* – Social farming is an innovative response that combines multifunctional agriculture and social and health care services. Its potential has yet to be realised across much of Europe. An INTERREG-funded project undertaken in the border region of Ireland and Northern Ireland with 20 farm households piloted services for 66 people over a 30 weeks period and learned lessons from the experience. Evidence gathered through the project indicates real and lasting benefits for people with special needs and people experiencing poor mental health as well as for the farm households involved. It also indicated that such services provided on farms are cost-effective when compared to cost of care in the public services.**

***Keywords* – social farming, special needs, mental health.**

INTRODUCTION

The value of people's engagement with nature and farming to their health and well-being is well established. Social farming is one such activity that facilitates this process while concurrently viewed as innovative within the suite of rural development activities that strive to harness the potential that exists in rural areas in pursuit of the EU's agenda of a multifunctional agriculture. Hassink et al., (2010) in a study of care farms in the Netherlands noted that care farms can be considered as an innovative example of community-based services that have the potential to improve the quality of life of clients. The value and potential of social farming is recognised at EU level (EU, 2012) and by a small number of mem-ber states such as the Netherlands, Belgium and Italy but receives little recognition and support in Ireland and Northern Ireland which have historically relied on institutions, particularly religious congregations and the not-for-profit sector, to provide settings in which people with special needs and those experiencing poor mental health can engage with farming and horticultural practices. A decline over the past thirty years in these traditional services coupled with a new direction for health and social care services delivery in both Ireland and Northern Ireland which seeks more community-based re-sponses to health and well-being creates a platform for the emergence of social farming in the region.

METHODS – SOFAB PROJECT

A three year INTERREG-funded project to pilot social farming in the Ireland and Northern Ireland border region was established in 2011 through a partnership of two universities and a local development company. The project, called Social Farming Across Borders (SoFAB) set its mission to*: promote Social Farming as a viable option for achieving improved quality of life for people who use health and social services and for farm families, through enhancing social inclusion and connecting farmers with their communities.* It combined public awareness activities with training and selection of pilot farms as the pillars upon which this mission was pursued. Despite the no-payment for piloting attached to the project, there was an over-subscription of farmers in the region for piloting the new service with sixty detailed applications assessed. Twenty farm households were selected for piloting which involved each facilitating a weekly visit of three people for a full day of farming activity for 30 weeks. All pilot farm households received eight days of training in preparation and support for delivery of services. The users of the services were identified through the local public health services as people who 'wanted to try out the farming experience', many for the first time. To reflect major areas of need for health services in the region, two groups of people were identified as participants, namely: adults with special needs in terms of learning disabilities (55% participants); and adults affected by mental illness (45% of the participants). The experience of the farm households and participants were recorded through observation, images and interviews over the period of piloting.

RESULTS

A notably high attendance rate of 83% by service users over the piloting period was recorded resulting in over 1,600 person days of social farming experienced. The Intellectual /Learning Disability (LD) group had average attendance rates of 88% contrasting with 76% for the Mental Health (MH) group. This high attendance rate served to underscore the extent to which the users valued the service provided as attendance was voluntary. Participants' positive experience of social farming is shown in Table 1 in which they rated their feelings of like/dislike on a scale of 1-10.

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Table 1 Distribution of Participants by Rated Experience of Social Farming Pilots (n=59)

Score	Description	% Participants
1	Highly disliked	1.5
5-6	↑	6
7-8	↕	13.5
9	↓	9
10	Highly liked	70

Some 88% of participants indicated their wish to continue with their visit to social farms at the end of the 30 weeks piloting. Dislikes of the experience by a small proportion of participants were largely associated with weather conditions, muddy ground and early morning starts. Participant testimonials identified a range of benefits with the most commonly cited being social inclusion (particularly within the farm household and rural community) and develop-ment of skills (such as herding and feeding animals, fencing and tree planting), see Table 2.

Table 2 Distribution of Participants by Type of Benefits derived from Social Farming (n=62)

Type of Benefit	% Participants
Social Inclusion	81
Skills development	81
Personal health and well-being	37
Progression	27
Purpose and routine	26

The experience of the pilot farmers was captured through content analysis of their testimonials which reported the main benefits to the farm households in terms of creating a more personally rewarding, relaxed and enjoyable working day. Farmers expressed how they 'looked forward' each week to the visit day and how it became 'an event for the farm household' which was enjoyed by the entire family ("the visits enrich our lives and those of our children too"Pilot Farmer). They also spoke ofthe visit being a way of planning to 'get particular jobs done' which benefitted from a group effort. The main challenge identified by the farmers related to securing payment for the time and effort they invested in the delivery of the service and how this might be organised in the future after the SoFAB Project ends.

With a view to delivering the SOFAB Project mission and sustaining the delivery of social farming services in the region beyond its lifetime, the project calculated the cost of service delivery on the pilot farms and related it to costs associated with public health and care services in the region. It was assumed that sustaining the social farming initiative required clear and objective measurements that allowed policy makers and health and social care service managers to consider the cost-effectiveness of service delivery on family farms relative to the institutional settings in which they were being delivered. A summary of the comparative costs is presented in Table 3.

Table 3 Selected Comparative Costs for Provision of Day Supports Services in Ireland and N. Ireland

		Person/day
SoFAB	Cost of service delivery	€66-€69
Ireland (RoI)	National Federation of Voluntary Bodies (2005) – intellectual disabilities	€64-€81
	Department of Health (2012) – intellectual disability services	€66-€76
Northern Ireland	Health and Social Care Board& Public Health Agency (2014) – learning disabilities	€87

Source: Kinsella et al., 2014

The average cost for delivery of services by the SoFAB Pilot Farms was €66/person/day in NI and €69 in RoI. These costs included labour provided by the farm household as well as reimbursement of all costs associated with delivery of the service including materials, utilities and insurance. Pilot Farms' costs compared favourably with the comparators.

DISCUSSION AND CONCLUSIONS

The effectiveness of the social farming experience to assist people with special needs (ID/LD) and those affected by poor mental health was evidenced. It delivered a range of benefits to service users as well as farm households through engagement in normal and every-day farming activities. It combined social inclusion, skills development and personal well-being outcomes for the service users and personal satisfaction and well-being for the farm families involved. The SOFAB Project has shown that these benefits can be delivered in a cost-effective way through family farms in Ireland and Northern Ireland. The challenge to deliver on the potential of social farming in the region lies in the extent to which this evidence can be considered in public policy formulation, budgeting and management decisions in the health and social care services. The redirecting of public funds for these services from relatively costly and mainly urban-based institutional settings to service provision in the community on family farms will remain the key to unlocking the potential that exists.

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The Social Farm Network for the Promotion of new Relationship Between Agriculture, Economy and Society

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***Abstract* – Social Farming (SF) is a traditional as an innovative activity for farmers that regards the use of resource from agriculture for rehabilitation and social inclusion. Despite the relevant diffusion of SF, it has not specifically been regulated and analyzed still today. To understand the phenomenon a survey was carried out in Sicily, where the SF is aggregated under the name of "Rete delle Fattorie sociali" and included agri-social farms and associations for social promotion, social cooperative and family ones. The study of the system relationships by adopting the Social Network Analysis was carried out. Results provided a "map of the relationships" among the operators involved into social activities of different kind and underlined the role of the "Rete" to coordinate activities and intermediation and to draw relationships with outside-network operators.**

***Keywords* – Multifunctional agriculture, Relationship analysis, Social Network Analysis.**

INTRODUCTION

Social Farming (SF) meant as the activity that employs material and immaterial resources to promote and carry out therapeutic actions, social and work inclusion of disadvantaged people (Di Iacovo, 2010). It is the expression of the new post-productivist trend that characterizes the agriculture sector and a passage from a logic based on the maximization of quantity of agriculture products to a multifunctional one.

In this prospective, social agriculture offering public services to local populations and could be represent an element of social, cultural and political innovation of the territory, focusing on the development of the social capital by strengthening the relational system and the development of reciprocity networks.

This work supposes that the possibility of agrisocial activities to meet satisfactorily the requests for multi-functionality and environmental-economical-social sustainability of territory, is to pass through the construction of a relational system that is able to involve various actors who are involved in the process of provision of such social services, supporting development of local territories (Foti et al., 2014).

For its wideness and plurality of activities, SF needs to intensify and consolidate relations with the external environment by operating in conditions of diffused relations. To perform these activities, relations among subjects that operate in different sectors become central. They have to interact through a process of competition and collaboration, not only according to market's rules, but also with respect of the reciprocity of mutualism, aiming at improving community welfare of local populations

In this frame a survey was carried out in Sicily (Romano et al., 2010), where SF has taken root so much to become a separate scenario compared to the national one.More specifically, the work focused on the role played by the "Rete delle Fattorie Sociali" (Sicily) (RFS) as an essential tool to favour the connection among the different subjectsthat operate in such context.

MATERIALS AND METHODS

The subjects that make up this working network have been characterized by the analysis of 17SF projects, provided by RFS database, for the period of time included between 2010 and 2014(Cacciola, 2014).The actors involved in the projects, that are 78, were grouped in 12 categories according to their institutional activities.

The relationship network was studied with SNA method, which is a methodology that allows describing the structure of a network as a combination of interconnected elements (Scott, 2000).For measurement and elaboration of relation data, it was used the software UCINET (Version 6).

Data were collected in an Affiliation matrix, a bimodal member-matrix, where lines indicate the actors and columns the events. From this, through matrix algebra operations, the co-membership matrix dichotomized was obtained. In this matrix each element has a value of 1 if the two corresponding actors have shared one project at least; or a value of 0 with no project.The network analyses carried out are those relative to the description of properties and characteristics of the network (distance and density) and those relative to the centrality (Free-mans' Degree and the Betweenness Degree) in addition to the existence of groups of actors with privileged relationships among themselves within the same Network (clique).

RESULTS AND DISCUSSION

From co-membership matrix was built the graph (Figure 1) that allows to view the structure of the network in which the ties between the actors are the result of the same event and the arrows indicate the direction of the connection.From examination of the graph, where are used different symbols to indicate the actors that belong (triangles) and don't belong (circle) to the RFS (rhomb), it is clear that the network tends to assume a star configuration in which the RFS represents the central actor.Also the graph shows the existence of anhigh density of relationships between a group of actors that tend to form a subgroup in which nobody takes a central role.

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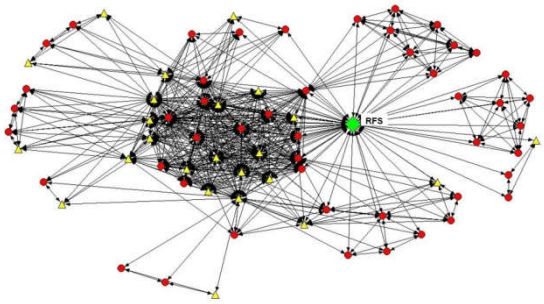

Figure 1. Graph of the co-membership matrix (Source: UCINET data elaboration).

Through the SNA were calculated a series of indices and measures useful to evaluate the characteristics of the network (Table 1).

Table 1. Values obtained from geodesic distance measurements.

Index	Value
Density	0.262
Standard deviation	0.536
Diameter	3
Average distance	1.953
Distance-based cohesion	0.570
Distance-weighted fragmentation	0.402

The value of the average density (0.262)indicates that in the network only 28% of possible ties are used. This value, which indicates a low level of cohesion of the network, doesn't affect its efficiency but finds its explanation in star configuration of the network where all the actors tend to communicate with a central actor rather than between them.

The value of standard deviation (0.536) indicates a wide distribution of the network density that can be explained in the existence of the ties of a subset of actors within the Network that increases the density value. This is confirmed by a clique analysis of the Network that identifies a subgroup in which everyone is connected directly to all the others and there is no other node of the network that supports the direct ties with all the clique's members.In this subgroup the number of possible ties is equal to the number of real ties and this leads to a density value of 1 that justifies the high value of the standard deviation of the entire Network.

The low values of the average distance (1.953) and geodesic diameter (3)indicate that the network is well connected since almost all the actors can be reached without mediator. Also the value of the Distance-based cohesion and the Distance-weighted fragmentation indicate a reasonable level of compactness of the network, a good level of reachability between the actors as well as the presence of a clique within the network.

Even the two centrality indicators used in the study (Freemans' Degree and betweennees) highlight the central role of the RFS that attracts about 33% of the relationshipin the working networkin addition to being the figure which acts as mediator in 43% of connections of the Network confirming its coordination work among its internal partner and outside ones.

CONCLUSION

In a context as today's one, where feels the need of developing a new rural-urban relation, and new functions are assigned to the agriculture sector, SF may represents an interesting tool to help valorising the social capital.

Surveys show that social farming activities for theirspecificity may represent forms of social innovation. In order to these activities can express their best potential and meet the demands of the territory, it is necessary them to organize into a valid relation structure, as that individualized, that may regenerate and/or increase the social capital.

In this perspective, the results show how the network identified for its characteristics (dynamism, reciprocity and relations), can contribute to promote the development of the social activities, trying to meet the needs declared and/or hidden of local communities.

To such aim, it would be interesting to strengthen and support the creation of aggregating structures, such as RFS Network SSFN which has supported the creation of a web full of connections among Social Farming operators, contributing to the spreading of this phenomenon (Timpanaro et al., 2013).

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Social/care farming in the making – Hungarian experiences

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***Abstract* – Social/care farming (SCF) is a new concept in Hungary thathas recently attracted a fair amount of interest from civil society organizations (CSOs), as well as rudimentary acknowledgment from policy-makers in Hungary. In this paper we attempt to identify the emerging actors in this field anddocumentthe construction of this new network in Hungary by analysing the challenges, opportunitiesand future prospects of SCF. Building on our own participant observation experiences from the first forum on SCF in Hungary organized in January 2014, and on three meetings of experts held in 2015,we identify common threads in the complex understanding of this field in the making.**
***Keywords* – social/care farming, stakeholder forum, Hungary.**

INTRODUCTION

Social/care farming (SCF) is an innovative approach to nature-based activities and services organized at farm level, with well-established discourses in Western Europe relating to multifunctionality of agriculture, rural development, social inclusion, etc. (Dessein and Bock, 2010). Built on the principles of social solidarity, as well as social and environmental awareness-raising, SCF consists of cooperative production units that involve persons with disabilities in production, processing and service activities, and also provide agricultural awareness-raising for the benefit of the society. The benefits for the target groups can include rehabilitation, social inclusion (integrating disadvantaged persons back into society), and skills development combined with the feeling of utility and self-appreciation.

In Hungary, the concept of Social Farming has only recently gainedmomentum and entered the public discourse.In the Hungarian context we explore how the rural development policy could have a special role in facilitatingSCF initiatives. The current rural development policy definesthe role of SCFbroadly: it describes a typical SCF context as consisting of rural settlements with a population of less than 500–1000, where socially and family supported inactive or unemployed inhabitants comprise 70 percent of the local population. Furthermore, the National Rural Strategy 2012–2020 dedicated two chapters under the headings of local economic de-velopment, social economy, and social land pro-gramme. This rhetoricalacknowledgement on the national policy level does not imply that this sector has been or will beincorporated in, or institutionalized through, the rural development policy – only that the phase of increasing recognition has started.

The Environmental Social Science Research Group (ESSRG) organized the first stakeholder platform event (January 2014) on Social Farming with the participation of experts, advocates and practitioners funded by the Hungarian National Rural Network. This forum provided an open space for joint deliberation and evaluation of SCF in Hungary, sharing best practice examples and previous experiences withSCF initiatives. The forum also generated discussion onthe success factors of the culturally appropriate and feasible operational structures of SCFin Hungary,as perceived by participants. Finally,itprovided space for expressingshort-termexpectations, future prospects, and priorities as defined by stakeholders. Half of the 42 participants consisted of non-profit CSOs (associations, social enterprises, foundations, social cooperatives); further participants included twosocial farmers, six researchers and twopolicy-makers for social cooperatives, and tworepresentatives from Professional Unions (of equinetherapists, and of the National Association of Entrepreneurs and Employers), as well as the Calvinist Church, Social Service Providers, Vocational Schools, and Microregion Offices. Recently, a new project has been initiated by one of the participating organizations and funded by the Norway Grants. Its objective is to identify an appropriate socio-economic model of SCF in Hungary (http://szocialisfarm.hu/). The Norwegian project has benefited from the enthusiasm of the stake-holders and the immediate results of the stakeholder meeting.

METHODS

Thepresentstudy aims to identify the emerging actors in the SCF fieldin Hungary anddocumentthe construction of this new network by analysing the challenges and future prospectsof SCF. Itbuilds on participant observation experiences from the first forum on SCF in Hungary (January 2014) and on three community-of-practice meetings of experts in 2015 under the auspices of the Norwegian project. Furthermore, the present study builds uponthe personal network and embeddedness that the present authorshave in relation to the topic, through previous projects (e.g. H. Petrics used to be a member of the Management Committee of the EU COST Action Programme on Green Care in Agriculture) and contacting producers who work with disadvantaged persons by focusing on their capabilities. The ESSRGhas established research relationships with SCF practitioners representing diverse stakeholder groups. In this respect,the present study canbe considered as engaged scholarship, where researchers are also essentialparts of the system of SCF currently emerging in Hungary,working as experts and facilitators inareflexive dialogue with the SCF community under study.

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MAIN RESULTS

Perhaps most importantly, the first stakeholder event in January 2014met the stakeholders' needs by providing a neutral open space for networking and starting meaningful dialogue among different stakeholder groups. Most notably, interest from CSOs was focused on the viability of various SCF enterprises, while policy-makers were mainly interested in the legal regulation of the rehabilitation entities in this sector.

Emerging actors

Duringthe forum many stakeholders identified the "autist manors"(accredited rehabilitation employers) as a special Hungarian success storyusing a typical organizational form. Several non-profit CSOs, enterprises, farmers and researchers emphasized their involvement in various other organizational forms, such as municipal-level initiatives, social pedagogy in homesteads, community learning gardens, etc. It was also argued that a SCF network needs to be created topromote transparency and cooperation in this sector, so that the key players can better coordinate their activities and share methodology. Many practitioners emphasized how SCFcurrently operates as a group of isolated projects,without any understanding of the whole sector; therefore a comprehensive resource mapping and gap analysis would be desirable. Key players also emphasized that there is a tendency for over-dependency on the subsidies; policy support would be helpful to gain VAT exemption, and to create a more definitive legal frameworkfor agricultural operations.

Challenges and opportunities

This leads us to the main challengethat was identified during the study: dependence on employment subsidies,which diminishes the ability toplan for long-term sustainability. While there seems to be urgent need for support in agricultural activities,processing facilities, sales, agrotourism, volunteering, and capacity building,there is no clarity on the market's role – i.e. how much SCF can be part of the market sectorand the agro-food domain (e.g. in terms of product sales). Stakeholders noted that social service providers are often forced to produce their own food to survive, while individual farm enterprises are reluctant to involvepersons with disabilitiesin production.A main opportunity in the sector's development lies in the adaptationcapacity and solidarity among stakeholders operating in this field. They emphasize the prospects of joint projects, incubation of new SCF enterprises, additional organizational development, and coaching. As for training needs,the main opportunity lies in enhancing the capacity of agricultural enterprises to work with personswith disabilities or other disadvantaged groups,and to even broaden their target group.

Future prospects

As for possible future activities, stakeholders would like to create model farms linking new target groups and their supportive organizations as well as farmers. Furthermore, sectoral dialogue among stakeholders could be facilitated by a new umbrella organization that would provide the necessary support in terms of training and networking. Stakeholders would also like to see more transparent operation for SCFsector; therefore quality assurance of the service portfolio and product/service labelling schemes would be necessary. To reach a broader audience and gain more public support,the SCF sector needs to identify potential users (who they are, what the main benefitsare for them) and create appropriate business models to engage with these target groups.

DISCUSSION

In Hungary, the concept of SCF is nearly unknown, while in Western Europe overall it has a high level of political acknowledgement (Di Iacovo and O'Connor, 2009): in Italy a law on Social Farming was approved by the Parliament in July 2015. In Hungary SCF is only rarely considered by stakeholders as rural development; however, in the international academic literature SCF is by definition a means of rural development, as it revitalizes rural areas and repositions the role of rurality in society, e.g. by making it more desirable, accessible, and altogether more helpful for the society.

Although we could identify a few common threads in the making among the stakeholders of this field, it is too early to draw firm conclusions. It seems that the SCF sector in Hungary is still not appropriately positioned in the public policy domain. This could lead SCF enterprises to be more motivated by employment funds,whereas rural development funds are difficult to obtain for this sector. As a dominant organizational form, autist manors do not necessarily engage in agricultural activities themselves;therefore they cannot be supported through the LEADER programme.

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The role of a territorial network in front of the economic pressures on the French social farming model

Gerald Assouline, Dominique Granjon[1]

***Abstract* - In France, social farming projects have been built by non for profit associations, according to strong humanistic values like solidarity, education, inclusion. Social farming is not considered as a business in France. Even for individual farmers who envisage it as diversification.**

A multi-stakeholders network like ASTRA, with deep territorial anchoring, has to be multi-functional: producing knowledge and information for social farming project holders, sharing practices and experiences, defending and disseminating solidarity values, 'helping' public authorities to put social farming development on their agenda. Obviously, ASTRA can not escape to the contradictions already mentioned. Which development model ASTRA has to promote vis-a-vis public authorities? Managerial and cost saving or humanistic and non for profit? We simplify the dilemma, for sure. But it is crucial for broadening financial resources. We can see the impacts of financial pressure on the network strategy at local level and its role in opposing to managerial destructive logic.

***Keywords* - social farming in France, territorial network, development model, values, financial logic**

INTRODUCTION

The development of social farming initiatives has been a development we can consider as mostly by default.

Social farming is not officially recognised. And the public support provided to the initiatives we refer is a support by default:

. Social inclusion gardens take benefit from the national un-employment social treatment policy;

. Users institutions (like schools for handicapped children), which send the children to the individual social farms, get support from the social affairs administration;

. Farms with residence capacities get local public support (mostly from counties) because they contribute to alleviate the crucial lack of hosting capacities for handicapped people.

This makes the activity very dependent from public funding. It is not really a profitable business. In France, social farming projects have been built by non for profit associations, according to strong humanistic values like solidarity, education, inclusion. Social farming is not considered as a business in France. Even for individual farmers who envisage it as diversification

The financial difficulties of the public budget provoked austerity harsh policy, and consequently accentuated the pressures on social farming projects.

STRONG PUBLIC INTERVENTION

The multiplication of social farming projects has been stimulated by the political will to develop social treatment policies of unemployment. In fact, approximately 20 to 25% of the people working in the social inclusion gardens succeed to re-integrate the job market or the professional training system at the end of their contract. For the others, the most excluded people, the problem remains acute.

The field of public action towards those projects is the inclusion by the economy, framed in the Law of Social Cohesion voted in 2005. This law has integrated inclusion initiatives in the legal code of work, with the mission of assuring the recruitment and work of unemployed persons with particular social and professional difficulties, by developing activities having a dimension of social usefulness. This law is the continuation of a former law voted in 1998 against exclusion. Since 2005, the insertion through economic activity can result from: production of goods and services for commercialisation, activity having social usefulness, activity having social usefulness, which may be connected to the commercialisation of goods and services.

The law says also that only socially useful activities, with or without marketing dynamic, can benefit of subsidised work contracts. Most of the time, inclusion gardens work through complex co-funding schemes. Self-funding resulting from the product selling represents some 10 to 15%, sometimes 20%. Private foundations also fund the social farms (10%). The rest results from multi-level public intervention : local municipalities, counties, regions, State decentralised administrations, European Union (with European Social Fund).

In our region Rhone Alpes, the funding sources are mobilised according to specific targets:

- The State and its decentralised administration at county level subsidise contracts between gardeners (workers) and the gardens by exemption (partial or total) of social taxes: those contracts allow the gardener to stay till 24 months in the garden and work 26 hours weekly (and get some 750 euros). It finances also professional training courses and job search.
- National (Ministry of agriculture), regional and European funds are asked for the agriculture and environment components of the economic activity, especially when creating the activity to cover investment costs; regional funds are often dedicated to projects which present themselves as sustainable and environmentally friendly;
- The region : different projects can be financed such as agronomic experiments, direct selling, environmental initiatives (bird protection, landscape protection, water recycling…), edges.
- The county level is mobilised mainly for its handicap policy support, directly by the farm or by the social – medical institution which host permanently the beneficiaries and for the staying /residence costs of the beneficiaries at the farm, on a per diem basis.
- Local municipalities: they can help for implementing the farm and may be interested in having those social

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farms to re-vitalise the rural tissue and re-activate closed farms.
According to the legal status of the initiative, the permanent staff cost is covered by the state (through the decentralised social affairs administration) or by the association which receive support from the county.

COMPETITION FOR PUBLIC SUPPORT

Farms developing hosting activities for social inclusion and care expect a diversification of the farm activity and income. They deliver a service charged to specialised structures which are in charge of hosted people:
- Un-employment service in the case of long term un-employed people,
- Medico-educational schools and specialised institutions for handicapped people,
- Social decentralised administration and county if users stay in residence in the farm.

Private, individual farms are paid by the using institutions for the service. Additionally, they receive subsidies for adapting the hosting capacity to the public. In the case of certified family hosting, there is public support to increase this tool.
For associative initiatives and inclusion gardens, production and service selling may represent 15 to 25% of the resources. All those initiatives receive strong public support, mostly from municipalities, county and regional authorities. In fact, this feature does not mean that the initiatives escape to competition.
At the opposite, the kind of neo-liberal decentralisation the country has been living in the recent years meant that State has been actively transferring competencies and charges to decentralised authorities (regions, counties and inter-municipality level) and decentralised authorities have had to assume those charges with limited resources. Such a process leads to a situation of tension in which local public money is not extensible, while the needs are growing, mainly because social issues have been increasingly transferred.
This tension is observable for the initiatives which are residences for handicapped people. They depend mostly on the county level. A growing number of projects are submitted to the county for yearly funding, instead of multi-year funding as it was till recently. To be sure to guarantee this money, the projects need to give compensation:
- More hosting capacity in residence for the same amount of money, which means increasing the productivity of permanent staff,
- Proposing to the authorities a better geographical coverage of the county: this supposes that the associations managing the initiatives are encouraged to grow up and open new capacities.

THE ECONOMIC MODEL OF SOCIAL INCLUSION UNDER PRESSURE: THE MANAGERIAL LOGIC IS INCREASINGLY INFLUENT

Many of those associative structures are progressively absorbed by umbrella organisations (mostly managed by patients or family organisations)., which are also associations. They lead a concentration process. Those umbrella organisations recruit managers in charge of managing the social farming structures. This managerial pressure threatens the identity of therapeutic hosting projects and values shared by staff and families.
In the current period, subsidies are extremely volatile and some of the social inclusion gardens are living serious difficulties and are under economic and financial pressures, from public funders. Their marge of manœuvre is not so broad, as their capacity to rise up their self-funding and compensate stagnating or decreasing public subsidies is limited for several reasons:
- The users they host and put at work are usually heavily socially handicapped people, with psychic effects due to their long term exclusion: it means that their productivity is not really elastic;
- The price of the basket they sell can not be significantly increased because of the economic crisis weighting on consumers income and because of the fierce competition by community led food supply . Groups of consumers create a vegetable and other food supply association, they contract local organic producers for delivery baskets and consumers subscribe for a weekly basket on a semi-annual or annual basis. Fact, inclusion gardens and AMAP system are rather close models in terms of products being delivered and consumers involvement.
- In the case of therapeutic farms with hosting capacities, agricultural production is increasingly considered as too costly by public funding. Educational and integrative impacts of this activity for disabled people are neglected.

THE ROLE OF A TERRITORIAL NETWORK: POLITICAL AND TECHNICAL

A multi-stakeholders network like ASTRA, with deep territorial anchoring, has to be multi-functional:
- producing knowledge and information for social farming project holders,
- sharing practices and experiences, promoting the best practices with films,
- pushing innovative initiatives, such as stimulating social mobility trajectories of persons with difficulties,
- defending and disseminating solidarity values,
- 'helping' public authorities to put social farming development on their agenda.

Obviously, ASTRA can not escape to the contradictions already mentioned. Which development model ASTRA has to promote vis-a-vis public authorities? Managerial and cost saving or humanistic and non for profit? We simplify the dilemma, for sure. But it is crucial for broadening financial resources.
We can see the impacts of financial pressure on the network strategy at local level and its role in opposing to managerial destructive logic: agriculture activities are threatened, directors of farms are fired or forced to dismiss…
Till now, our technical resource centre role has been supported by the region and county. And the impacts are very positive.
What may happen if we express political statements contradicting or denouncing the effects of the current financial logic?
Difficult to answer such question, but it may force us to diversify our funding system to preserve our independence. Not an easy game!

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Social Farming and social protection in developing countries in the perspective of sustainable rural development

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***Abstract* – In rural areas in developing countries, numerous global trends contributeto the creation of social and economic deprivation and the impoverishment of local communities. These expose territories and local inhabitants to the risk of abandonment and economicexploitations. Worldwide inequality also seems to be on the rise, especially in rural communities. In this framework, despite the availability of economic resources,the risk of marginalization for the less empowered in rural areas in developing countries has been increasing, owing to the unequal distribution of resources, the lack of services and public expenditure. Therefore, there seems to be a need to redesign concepts and criteria for sustainable development by addressing in parallel the economic goals and the social dimension of sustainability. In the debate on rural sustainable development, the provision of innovative and effective social services should be considered to support social inclusion, promote equality and tackle poverty. This paper presents the concept of Social Farming (SF) as a possible approach and practical way to foster sustainable development in low-income developing countries (LIDC). The paper also explores the relationship between SF and social protection (SP) in rural areas and suggests a methodological implication for designing pathways of positive change in local communities.**
***Keywords* – Social Farming, social protection, LIDC, social sustainability, community-based approach.**

INTRODUCTION

In rural areas different global trends, such as globalization, environmental abuse, population growth, urbanization, and not least the lack of public funds, contributeto the creation of social and economic deprivation, causing the impoverishment of local communities and exposing territories and local inhabitants to the risk of abandonment and economic exploitations (Kelles-Viitanen, 2005; Kitchen and Marsden, 2009; De Schutter, 2013; FAO, 2013; Di Iacovo, 2014). At the same time, the need for sustainable development of rural areas is internationally recognized, as rural systems provide essential economic, ecosystem and social services for society (FAO, 2013; Di Iacovo, 2014; Fish,Winter and Lobley, 2014; Sandifer, Sutton-Grier and Ward, 2015). As a result, the approach used in rural development is crucial and needs to be given due consideration. In this light, although agricultural intensification(Royal Society, 2008) seems to be a straightforward solution to meet the needs of an increasing population (i.e. food availability), the paradigm of development based exclusively on abusiness and economic approach needs to be reconsidered (FAO, 2013). In rural areas (but not exclusively), despite economic growth,income and social inequalities persist and opportunities are not open to all. The 1.2 billion poorest people account for only 1 percent of world consumption, while the billion richest consume 72 percent (OECD, 2011, 2013). In OECD countries, the Gini index has deteriorated since the early 1980s by about 10 percentage points (OECD, 2011, 2013) as a result of incremental inequalities in the distribution of income. Inequalities and social exclusion are also prevalentin rural areas in developing coun-tries,working againstspecific groups of people because of their gender, religion, ethnicity or level of poverty (UNDP, 2013). Hence, a more comprehensive approach to and stronger focus on the social dimension of rural development are needed, especially in the current socio-economic regime where the methods of production are increasingly de-institutionalized and desocialized (Di Iacovo, 2014). In this perspective, this paper aims to explore Social Farming (SF) as a pathway to foster social sustainability in rural areas while decreasing rural poverty and vulnerability (Di Iacovo, 2014). In particular, the paper explores the relationship between SF and social protection (SP) in low-income developing countries (LIDCs) where it can offer appropriate solutions to promote wellbeing, inclusion and responsibility in rural communities.

METHODOLOGY

This research is based on qualitative analysis of primary and secondary data. Information was collected from:

1) A literature review of secondary sources on SF and SP in the development context, including policy documents, research and working papers, country reports, Websites, etc.;
2) A workshop with key informants. Key informants discussed the main findings of the literature review and sharedgood practices and select cases for further studies. Key informants were chosen based on their professional and social role in their communities. They includeddevelopment practitioners, academics and other stakeholders with knowledge of issues related to SF and/or SP, and/or rural development.

RESULTS

Although no universal definition exists, we can define SF as the use of agricultural and natural resources in order to produce food and social services with the aim of improving the quality of life of rural and peri-urban inhabitants (Di Iacovo, Senni and de Kneght, 2006; Di Iacovo and O'Connor, 2009; Dessein, Bock and de Krom, 2013; Di Iacovo et al., 2014; Leck, Evans and Upton, 2014). In particular, according to Di Iacovo and O'Connor (2009), SF is a way to promote healthcare, care, education, em-ployment, vocational training, rehabilitation and other activities that contribute to social inclusion, to the reinforcement of social protection nets, and to the quality of life of vulnerable groups. The latter are people with low contractual ability who are often marginalized within the society.

Although SF practices are context-specific, in all the observed case studies from LIDCs (i.e. Burundi; Congo; Ghana; Côte d'Ivoire; Niger; Uganda; United Republic of Tanzania) SF represented a possible pathway to address the challenges of rural transition towards better social sustainability and the organization of more resilient communities. The paradigm of SF to create stronger and more inclusive communities seems to be an opportunity for rural areas where traditional practices, attitudes and resources may be reshaped in the perspective of social sus-tainability. In this sense, SF relates alsotoSP, which FAO defines as *"the set of policies and programmes that address economic, environmental and social vulnerabilities to food insecurity and poverty, by protecting and promoting livelihoods and thereby supporting the rights to food and social protec-tion"* (FAO, forthcoming). According to Waring et al. (2013), social protection systems should address inequities of gender, marginalization and discrimination through the application of human rights principles. Rural areas in LIDCs are characterized by high poverty levels, high informality and self-

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The paper draws on elements of the background concept paper on Social Farming for Poverty Reduction developed by FAO and the University of Pisa (forthcoming).

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employment, limited service provision, and limited payment capacity for services when they are offered. Inequalities in social relations also exclude people from accessing resources and drive impoverishment. Having a network (e.g. family/households, groups, villages, etc.) might be crucial for people to decrease their vulnerability to shocks and stress. Where effective institutions are lacking or absent, social and cultural factors tend to play a significant role in the functioning of rural communities (Waring et al.,2013).Local social safety nets, as traditional forms of social protection, are spontaneously developing within rural communities to cope with the lack of public investment. In rural areas in LIDCs, the family connections and informal networks are crucial in providing opportunities (e.g. jobs) and influencing how resources areallocated. SF can work preciselyon this particular set of informalities, improving the positive approach of the informal networks while correcting their negative aspects. In fact, cultural norms may discouragesome types of workers from accessing certain jobs or resources, and may encourage social exclusion based on differences. Conversely, SF can play an important role in sustaining marginalized individuals and groups through their active participation in processes of rural development based on a new model of farming. Particularly, for certain categories of people such as orphans, migrants, widows, elderly without children, persons with disabilities, and youth, SF can represent animportant way to develop an alternative support network within a community. This mechanism of social protection can increase the resilience not only of the target group but also of the community itself,by making it become more cohesive. During the discussion with key informants,it was pointed out that SF can particularly benefit 1) women who in rural socie-ties are particularly vulnerable to impoverishment, food insecurity and malnutrition; 2) youth who in rural areas find it difficult to overcome the economic and social barriers to get an education (lack of education services) and thus a chance for decent employment; and 3) children, as SF can be a means to fight child labour and promote child protection, thanks to the childcare support offered to rural families.

CONCLUSIONS

In conclusion, in view of its conceptual and operational framework (definition, objectives, benefits, actors involved), we propose that SF can be qualified as a social protection instrument: it aims to enhance the social status and rights of marginalized groups that need special care or would otherwise be denied access to basic services. From our analysis we can state that SF is able to incorporate protection from social, economic and cultural biases and discrimination, and to promote the right to live with dignity. Particularly during the workshop, the key informants have observed that SF can be viewed as a multisectoral and multidimensional approach to social protection, one able to address complementarities between food and income security, investment in human capital, employment, access to social services, and unpaid and decent paid work in the care and subsistence economies – as well as the impedi-ments, such as stigma and discrimination, which prevent marginalized populations from accessing services. In addition, SF has the potential to protect the human rights of people in different life cycles from childhood to old age (Di Iacovo, Petrics, Rossignoli & Tamma, forthcoming). Nevertheless, most of the key informants noticed that the fact that SF works at the crossroads of different sectors and disciplines might represent a challenge for its application, due to the sectoral approach applied to rural development in LIDCs. By challenging this sectoral approach, the use of SF as a means of social protection presents opportunities for a methodological rethinking of the paradigm of development aimed at promoting welfare, social inclusion and sustainability in the rural communities of LIDCs.

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Analysing Social Farming Initiatives In Developing Countries: A Case Study From The Ivory Coast

M. Silva Vargas[1]

***Abstract* – Challenges in rural areas have led governments, researchers and the international community to study and propose solutions for development. In Europe the concept of Multifunctional Agriculture uses agri-rural resources for offering services beyond the mere production of food and fibre, promoting development in the countryside. Within this framework there is the novelty of Social Farming, which utilizes agri-rural resources to promote social inclusion, rehabilitation, and other social services to specific groups with low-contractual capacity, such as exprisoners or disabled people. Social Farming has not been sufficiently explored or promoted in developing countries. This paper presents a case study of the Social Farming paradigm in Côte d'Ivoire, analysing a project created to integrate ex-combatants in the agro-pastoral field.**

***Keywords* – Social Farming; Agri-rural; Excombatants; Reintegration; Civic Economy.**

INTRODUCTION

Rural areas have always faced considerable problems, such as rural-urban migration, low incomes, poor education services, etc. (Kitchen and Marsden, 2009). Yet, many authors have stated that the rural is alive and actively looking for solutions (Bell et al., 2010). As an example, European rural systems are approached through the concept of Multifunctional Agriculture (MFA), which is a shift away from a productivist view of agriculture to a multi-purposes one (de Krom and Dessein, 2012). Inside the MFA one example is called Social Farming.

Social Farming (SF) promotes a pioneering use of agri-rural resources to perform agricultural activities and offer social services, such as rehabilitation, social inclusion, education and more. It targets vulnerable beneficiaries with low-contractual capacity such as ex-prisoners, disabled people, etc. (Di Iacovo and O'Connor, 2009). SF has been widely investigated in European rural areas, but due to its characteristics and outcomes it could be explored in developing countries with certain vulnerable groups, such as ex-combatants in Côte d'Ivoire.

Indeed, an upsetting result of the civil war was the militarization of young civilians that nowadays need a way to reintegrate into the system. For this purpose the country has initiated a process of Demobilization, Disarmament and Reintegration (DDR), which provides several packages for inclusion. One of these is the Projet de réintégration de 2000 agropastoraux (PRAP) that aims at integrating 2000 excombatants and people from host communities using agri-rural resources (ADDR et al., 2013).

The objective of this paper is to answer the following research questions: 1. Which characteristics of the Social Farming model exist and do not in the PRAP project? And 2. How well the Social Farming innovation could be part of the ex- combatants' reintegration process? This would be helpful to understand if the hypothesis that SF could be promoted as a tool to successfully reintegrate excombatants is true. This hypothesis is based on the fact that Côte d'Ivoire is an agricultural nation with a high number of vulnerable actors whom need a job, social reintegration and a sustainable future.

METHODOLOGY

The methodological framework was based on the SF in developing countries: minimum requirements matrix built by a research group from the University of Pisa and modified by the author (Fig 1). (Di Iacovo and Rossignoli, 2014).

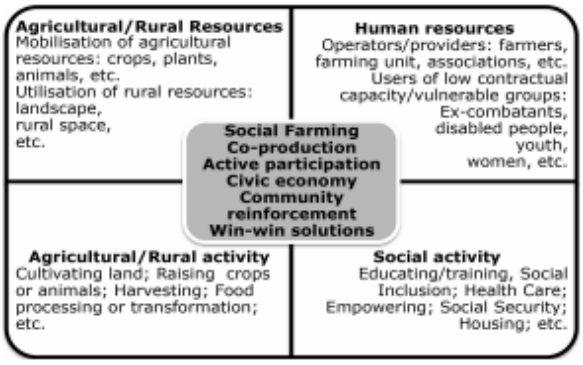

Figure 1 SF in developing countries: minimum requirements

Following the Fig.1 matrix, qualitative data collection tools were developed: semi-structured surveys and focus group guidelines for different stakeholders, who were primarily PRAP project recipients or ex-combatants and host communities; and secondarily PRAP main officers/managers and representatives from stakeholder organisations The data was collected in four different cities (Abidjan, Bouaké, Korhogo and Ferké) during June 2014. Data analysis was carried out with NVIVO software and supported through visual photographic monitoring.

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RESULTS

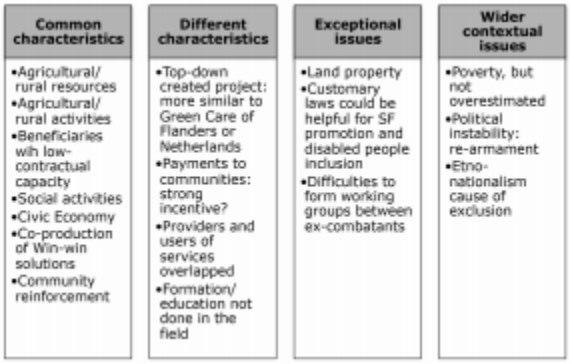

Figure 2 Summarised Results

Figure 2 summarises the comparison between SF and PRAP. A key finding in common is the notion of Civic Economy, which states that civic virtues such as solidarity promote economic growth (Bruni and Porta, 2003). This might a feature of Ivorian communities, since rural self-help nets exist inside their customary rules. Another common characteristic is Community Reinforcement, which is done through a series of top-down planned social cohesion activities where participation is voluntary. The idea is that factors other than funding motivate communities to participate, i.e. they want to reintegrate ex-fighters so as to fortify social capital and secure stability.

As for the main differences, PRAP is introduced by a higher authority, which departs from the SF grassroots approach. Also, the fact that the authority pays the host community to integrate ex-fighters makes it difficult to state that communities embrace beneficiaries based only on Civic Economy. Another difference is the distinction between providers and beneficiaries. The SF definition states that groups of people can work together with farmers and/or social practitioners (Di Iacovo and O'Connor, 2009). In PRAP there is no distinction, since ex-combatants start their own farm. Yet, the initial plan was to include them in existing agri-businesses.

DISCUSSION OF THE RESULTS

Looking at the results, some considerations could be made. First, the fact that the PRAP project is a topdown planned program with payments made from the government to host communities can categorize the PRAP as similar to the Green Care regulatory framework in the Netherlands and Flanders, where farmers receive assistance from the government in order to integrate vulnerable people into the economy. This idea could be reinforced by the fact that communities' participation is on a voluntary basis. To truly understand the role of the payments an analysis after the provision of communities' allowances has stopped would be necessary. If reintegration continues, then the Civic Economy nature could be rural communities' best asset. Likewise, it would be interesting to integrate ex-combatants in already existing agri-businesses. This could be strengthened through assistance to host farmers, so as to provide them with necessary tools to assist ex-combatants. This plan would be closer to the Netherland's Farming for Health model to empower the farmers themselves to become practitioners of care (Dessein, 2008).

SF could be part of the reintegration process, taking into consideration some contextual issues, such as diverse ethnicities, political instability and that including ex-combatants into society is a major challenge, since during war they committed atrocities against civilians, including their own communities (Ginifer, 2003). A good example is the case that Peters (Peters 2007) observed in Sierra Leone: a group of ex-combatants that have autonomously started their own community in order to work in agriculture. For sure, a community formed only by ex-combatants raises fears and other unique challenges, so its creation could be promoted inside an existing communitarian farm, away from their original communities, and possibly including other postconflict vulnerable groups.

In brief, both models provide important development strategies but with remaining issues that have to be considered. While the initial aim of this analysis was to simply compare two different models, some specific community approaches emerged that could be used to promote SF initiatives.

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Developing a social farming project in Suriname

M. Elings, L. van de Groep & W. Joop[1]

***Abstract* - Suriname has great potential for the development of sustainable agriculture: there is enough territory available, the ground is fertile, the water supply sufficient and the climate is overall very favourable. By letting mentally weak or mentally disabled youth participate in this development in Suriname it will enhance this groups social and economic position. This is of great importance because there are very few possibilities for this particular group of youth to develop within the Suriname society. By creating a training programme which will help these young people to learn about agriculture and teach them practical skills they become more independent while also stimulating sustainable agriculture in Suriname.**
***Keywords* – Suriname, social farming, training, self-confidence**

INTRODUCTIONOF THE PROJECT

In Suriname there is an enormous need for schooling specifically for young people who are mentally weak or mentally disabled. Training that focus less on intellectual capacities and more on practical skills. There are several social institutions that take in mentally challenged children and young adults. However, there is little to no collaboration between the institutions and they are mostly focussing on what their inhabitants cannot do instead of looking at their possibilities. As soon as they hit adulthood these mentally challenged youngsters leave the social institution and are left in the care of their families if not to fend for themselves. Through a lack of a proper education the opportunity for them to develop is rather small. Also they are much more vulnerable and a more likely to become victims of abuse and extortion. Agriculture on a small scale can offer people with a mental disability enormous opportunities, because they will be able to support themselves or make a contribution to the family income. This in turn will enhance their self-esteem and also their social role within their own family but also in society. Moreover, working in the agricultural sector will provide them easy access to fresh and healthy food instead of expensive imported products. This project will be focussing on teaching this particular group of young people skills which will help them reinforce their social and financial posi-tion. By doing all of this it will have a positive effect on self-reliance, self-confidence and quality of life.

PROJECT ORGANISATION

To achieve this project's goal a consortium of Suriname and Dutch organisations was created. In the project they work together to create a basic training programme for mentally weak or mentally disabled youth. In Suriname the institutes of Matoekoe, Engedi and the Rebecca Scheltz foundation have been a part of this consortium as well as Wageningen UR (Plant Research International) from the Netherlands. Matoekoe foundation, Engedi foundation en the Rebacca Scheltz foundation all provided the necessary locations where the activities were developed and tested, during which they had constant direct contact with the target group. Wageningen UR shared their knowledge regarding experiences they gained through similar projects in the social farming sector in the Netherlands.

RESULTS OF THE PROJECT

The skills and further content of the training are set and recorded in a qualification file. This file will form the basis of the training programme. Three pilots have been started in different locations and through meetings and feedback the project supervisors share their experiences. This exchange of knowledge has led to a manual or handbook which will serve as a guideline for other similar social institutes wanting to offer the same sort of training and education.

CONCLUSION

This project met all the requirements to fulfil some of Surinam's needs. The enhancement of collaboration between social institutions. This collaboration will be beneficial for the development of the mentally weak or mentally disabled youngster that live in these social institutions. This particular way of offering shelter to mentally weak or mentally disabled youth will make an education more accessible, and will allow them to have some basic education. This will lead to more educated people which in turn will lead to a substantial improvement of the economic and social position of these youngsters making them less vulnerable and give a positive effect on their self-esteem, self-confidence and quality of life.By this growing group of educated people with a stable social and financial status will lead to a better and improved Surinam society.

ACKNOWLEDGEMENT

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WG14 - Rural tourism (agri-tourism) and changing urban demands

Since some decades ago, rural tourism and related activities have been considered important tools to promote and/or to foster local development, particularly in peripheral rural regions. Although the transformations in the role, meaning and place of agriculture have induced major changes in the socioeconomic fabrics of many rural areas, the consequences of these changes are particularly profound in marginal rural contexts. In these regions the loss of their productive character has strongly contributed to the emergence of new roles and functions. It is a multifunctional rural, and mostly a consumable one, that emerges from this set of transformations. Within the multifunctional nature of agriculture in many peripheral rural areas, tourism and leisure activities, together with environmental protection, appear to be key elements.

Although rural tourism is not a consensual concept, and it includes many forms of tourism (e.g. agri-tourism, village tourism, nature and eco-tourism) a common (and very broad) definition suggests that it should include all the tourism activities developed in a rural area, motivated and sustained by all the features of rurality and inducing connections between the social and economic contexts. Therefore, rural tourism should stand on local activities and characteristics (e.g. agriculture, landscape, natural resources), promoting connections and interactions between them and, as such, contributing to sustainable local development in generally disadvantaged contexts. However, most of the empirical evidence produced up to now has shown that the connections between tourism and the broader rural contexts are often faint by a diversity of reasons, ranging from the small-scale of tourism enterprises, to the vulnerability of local contexts, as well as from the absence of efficient networking to the marketing strategies used.

Specifically, contributions should address the following topics:

- *The connections and interactions between rural tourism and local economic, social and cultural activities*
- *The new institutional arrangements that are successful in promoting rural tourism and sustainable development*
- *The new marketing & communication concepts that are emerging (role of social media) in relation to changing urban demands and changing urban customer groups*
- *The contributions of rural tourism to sustainable rural development, particularly in peripheral regions*
- *The role of tourism for the development of innovative (rural) products*
- *The diverse demands, consumptions, expectations and 'gazes' of tourists regarding rural tourism destinations*
- *The transformations of rural and local identities as consequence of rural tourism*
- *The changes in rural tourism demands, consumptions, offers, products and contributions to local development in the current context of economic crisis.*

Abstract proposals are invited that offer both empirical and conceptual perspectives on the above mentioned topics.

Convenors:

Elisabete Figueiredo, Department of Social, Political and Territorial Sciences, University of Aveiro, Portugal.
Antonio Raschi, IBIMET, National Research Council, Italy.

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Consuming the rural idyll through food – analysis of the consumption of rural food-stuffs by urban populations in Portugal

Maria João Carneiro, Celeste Eusébio, Elisabete Figueiredo, Diogo S. Silva[1]

***Abstract* – Food plays a very important role on the outlining of the cultural profile and identity of territories, mirroring its material and immaterial aspects. It contributes to fostering positive images and social representations on rural areas and is an important part of the tourists' experience of a destination. It is argued that food may contribute to improve traditional local productions' development and the relations between tourism activities and both regional and local social and economic companies, especially in the most disadvantaged and marginal rural territories, such as a large part of the Portuguese rural areas.**

This paper deals with the identification of the consumption of rural food products by urban residents, determining the factors that influence these consumption processes. By analysing data gathered through a survey applied to a sample of Portuguese urban residents, it was found that more than three quarters of the respondents consume small-scale, rural produced foodstuffs, considering those products healthier, better flavoured and more reliable than other products. It is argued that the respondents' attachment to rural areas, including the frequency of visits to these areas, their images of rural areas, and their sociodemographic profile are the factors that have most impact on the consumption of these products.

***Keywords* – Rural traditional food products, Rural areas, Rural idyll, Rural tourism, Urban demands**

INTRODUCTION

Food is a relevant part of the culture and identity of a territory, reflecting both material and immaterial aspects such as the biophysical conditions, local environment and natural resources, main agricultural productions, activities and traditions, as well as specific know-how and visions of the world local populations have developed during centuries. Rural agricultural food products and the ways in which they are transformed, prepared and presented are, therefore, part of the culture and tradition that are closely linked to territory characteristics. In this sense, food is "more than just food" (Figueiredo, 2013); it is part of a territory's heritage and legacy (Bessière, 1998; Fonte, 2008; Cristóvãoet al., 2008).

Nowadays, food is also considered a major part of what has been defined as the 'rural idyll', contributing to foster positive images and social representations on rural areas and acting as a pull factor regarding rural tourism destinations (Bessière, 1998; Cohen and Avieli, 2004; Montanari and Staniscia, 2009). Food is an important part of the tourists' experience of a destination and may contribute as well to foster both traditional local productions' development and the liaisons between tourism activities and local social and economic fabrics (Morris and Buller, 2003), particularly in peripheral and disadvantaged rural areas, as it is the case of a large part of the Portuguese rural territories.

METHODS

The main aims of this paper are to identify the consumption of small-scalefood products of rural areas by urban residents and determine the factors that influence this consumption. A survey was applied to a stratified sample of Portuguese urban residents (N=1223). First, a descriptive analysis was carried out to characterize the consumption patterns of rural areas' food products of urban residents, the motivations and constraints associated with this consumption. In a second stage, an exploratory study was carried out using a backward stepwise logistic regression analysis, to identify the factors influencing the consumption of rural food products.

The dependent variable is a binary choice indicating whether respondents had purchased rural food products or not. The independent variables included in the model were related to image of the rural areas, link to these areas and socio-demographic profile.

DISCUSSION OF RESULTS

Results revealed that most of the respondents (77%) consumed small scale produced ruralfoodstuffs, being vegetables (especially potatoes) (66%), fruits (41%), wine (20%), olive oil (18%), cheese (16%) and meat (14%) the most consumed products (Table 1). The main reasons for consuming these products were the fact that they are considered to be healthier (indicated by about 42%of the respondents), have abetter flavor (42%), and be more reliable (29%), followed by the willingness to support local producers (18%). Almost two thirds of the sample (62%) do not have difficulty in acquiring these products. The higher price (24%) and lack of accessibility to the products (19%) emerged as the most important constraints to acquire these products.

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This paper was elaborated within the scope project Rural Matters – meanings of the rural in Portugal: between social representations, consumptions and development strategies (PTDC/CS-GEO/117967/2010). This is a 3 years research project, funded by the Portuguese Foundation for Science and Technology (FCT) and co-funded by COMPETE, QREN and FEDER (http://ruralmatters.web.ua.pt/).

Table 1. Consumption of food products of rural areas

Patterns of consumption of local products	N	%
Consumed food products of rural areas		
No	285	23.3
Yes	938	76.7
Most consumed products		
Vegetables	611	65.5
Fruits	381	40.8
Wine	185	19.8
Olive oil	163	17.5
Cheese	151	16.2
Meat	131	14.0
Honey	78	8.4
Other dairy products	75	8.0
Eggs	71	7.6
Bread	68	7.3
Main motivations to consume the products		
These products are healthier	395	42.1
These products have a better flavour	390	41.6
These products are more reliable	273	29.1
Willingness to support local producers	168	17.9
These products are organic	143	15.2
These are national products	120	12.8
Major constraints to consume the products		
These products are more expensive	232	23.7
These products are difficult to find	185	18.9
It is difficult for me to go to rural areas	157	16.0
These products are produced in a small scale	123	12.6

The logistic regression model satisfied the assumptions required for this type of analysis. The model Chi-square is 172.820, $p<0.05$, the Nagelkerke R2=0.208, the Hosmer and Lemeshow test=15.021 with a p value=0.059 and 77.3% of cases are correctly classified. The independent variables presented in Figure 1 are the variables that were statistically significant at 0.05 level. The attachment to rural areas - specifically the fact of having lived in rural territories - the image of rural areas – mainly the image of rural as an idyllic space, a space of wellness and a developed space -, the frequency of visits to rural areas and the socio-demographic profile of respondents – namely the marital status - were identified as the factors that have most impact on the consumption of these products (Figure 1).

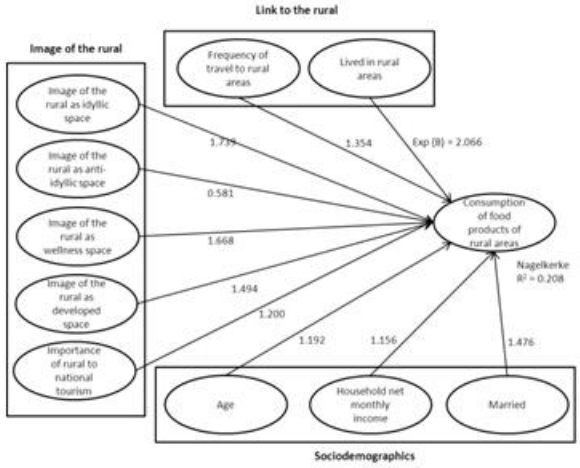

Figure 1.Determinants of the consumption of food products of rural areas

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New tourist experiences in the productive areas of PDO / PGI of rural Tuscany

Angela Crescenzi, Raffaele Mannelli[1]

***Abstract* – This note describes the value of PDO and PGI - excluding wine - for tourist visits to the farms. The aim is to highlight the potential tourist attraction that the geographical indications express for the Tuscany region. Opening up to tourism and planning meeting with farmers can promote the knowledge of the characteristics of the products as well as of their territory, methods of production, agronomic and transformation practices. The strong relations to the territories of PDO and PGI productions offer to the consumer many other elements of interest in the different areas of Tuscany like churches, museums, archaeological sites, landscapes, parks, historic sites. Firms should be combined in a single proposal to explore the product and its place of production along with the tourist items of the geographical indication area. In this path, the protection consortia play an important role in promoting collective proposals and in guaranteeing the quality of the touristic offer of its members and not impair the reputation of the product.**
***Keywords* – PDO and PGI, Tourism, Rural tourism, Guided tour on PDO / PGI Farms**

INTRODUCTION

European Union and Tuscany Region policies pursue multifunctionality in agriculture as a farmer income integration. Along with the agritourism are developed new activities as didactic visits, hunting, Agricamping, rural kindergartens and other activities of smaller economic value.

Multifunctionality has also influenced non-agricultural businesses, like industrial archeology, industrial products museums, guided tours to learn about the production processes, consumers participation in product tests, etc..

Consumers expressed a general interest in the production areas especially in those that generate high value products. Wine tourists are interested not only in wine but also in his world. Wine cellars already host concerts and art exhibitions, in addition to more traditional activities such as wine tastings and presentations of the production process, and visits.

In this note we examine forms of multifunctionality in farms producing PDO and PGI products – with the exception of wine. Our thesis is that their production processes have value even from a touristic point of view, and that farms opening for touristic visit should offer internal paths to show their production methods and environments.

In Tuscany are registered 28 PDO and PGI, the areas covered by PDO and PGI represent large part of the regional rural territory and this is a specific factor of identity. Farms producing PDO and PGI are authentic expression of Tuscany and for this they are best placed to enter the tourism business. These farms can become a productive touristic destination where the production process can be known through a guided tour – possibly including an active form of participation to the process itself.

SCOPE

PDO and PGI products are certainly the more typical excellences in agriculture. The forms of protection of these productions are geared at ensuring consumers the quality and the real origin of the products. This protection stretches from the area of production to the consumers, who recognize the value of most products.

It can be argued that a protected product incorporates in itself a small share of the capital: the artistic, historical and cultural quality of the territory are present in it. Tuscan food companies are credited in the production system as a high-quality businesses, and intimately connected with the culture of the place (anima loci). These farms and their products contribute to the identity of the place which in turn characterizes places and productions. We can assume that the bond between PDO/PGI and territory is a circular flow generating a potentially virtuous cycle of mutual enrichment of value.

The tourismification process, as it was called in some studies, was born in places of industrial archaeology and in museums of historical productions and has regarded also handicraft productions of high artistic quality; in agriculture this process has mainly concerned wine cellars and olive oil mills. But this process of transformation, from "alive" places of production in attractive places for tourists, is in its expansion phase. The desire for knowledge of other products besides wine and oil has been expressed by tourists and can find an answer in the visits of other farms, especially those involved in PDO or PGI productions.

This path of development of rural areas - peripheral from the touristic point of view, but not marginal in agricultural production - has some weaknesses at the organizational level. First of all, farms must mature awareness of their tourism potential with respect to the products with designation of origin; then it has to develop a tourism product centred on agriculture and, not least, it has to build a network with other farms sharing the touristic offer. In fact the touristic offer must be identified and supported by a collective promotion action.

These requirements, along with an unclear definition of the touristic product, greatly affect farms' marketing strategies and their ability to develop a new multi-functionality oriented to capture the greater added value incorporated in quality productions.

Literature identifies several motivations for this form of tourism: from the educational one directed to the visit of a farm, to the consumer who wants to know how a product is made, or the consumer who desires to participate in some production stage in

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order to gain knowledge about times and methods of production. The tourist wants to increase his power to recognize and appreciate a product for its effective value, he wants to know the area where the product is made.

VISIT LIVE PDO / PGI FARMS: A TOURISM PRODUCT?

Tuscany has a strong regional branding known all over the world. On such a branding a tourism like Living Farm Tourism can be built. The variety of protected origin productions can develop a touristic offer that is differentiated by area and by product. Some food protected names of Tuscany are well known all over the world. This knowledge does not have a structured response in terms of tourism. Recall that here we don't deal with wine production because already exists a vast literature dedicated to eno-tourism. Instead, the system of farms engaged in the production of other excellent products has not developed any touristic proposal exploiting the protected designations of origin, except in some rare individual case.

The PDO / PGI can be used to catch the attention of the consumer, transforming the consumption of the product in a quality touristic attraction for the area.When a person consumes a protected product far away from the production site, he takes part in a sensory experience that can translate into an interest in the area of production and generate a visit to the farm, a trip to the production site, and perhaps the desire to know the communities that live in those areas, or the history, the production technologies, the distinctive characteristics of the product. And conversely, a deeper understanding of the production context can explain to the consumer the value embedded in the protected name and make him available to pay more than what he would pay for a competitor substitute product.

UNIQUENESS, CRITICAL ISSUES, PROBLEMS

A visit to a farm is an experience that possesses unique traits in the tourist offer. The main one is the authenticity of the experience. Note that such uniqueness belongs to the farm rather than to the product or to the geographic area[2].

In summary, the organization of the visit of a agricultural enterprise must take into account the following strategic points: welcome, presentation, visit, accessory and goodbye. Activation of company visits must find a solution to the following problems: risk factors, adoptable solution, presence of risk. In particular, the activity of sightseeing on the farm requires an insurance cover for potential risks during the visit. Main organizational problems in the management of farm-visits: absence of a contact point to booking the visit to the farm, response time at the booking request, little available time for the farm to carry out the visit, management of visitors under the age of 18, difficulty to accept big groups or individual visits, availability of vehicles suitable for transporting visitors, accessibility of farm.

CLOSING REMARKS

The consortia or PDO / PGI associations for the protection and promotion can play an important role in accompanying the development of the tourism product. In fact, they can drive their associated farms in this path of "Sightseeing Farms PDO / PGI". These consortia are carrying out the promotion of the product, of the production environment, of the traditions, of the skills and knowledge; these values are already present in the member farms. The same information can be more easily transmitted to the consumer / tourist during a visit in farm.

The consortia of PDO and PGI Tuscan products could develop a joint communication campaign on farm visits associated to the product consumption as well as to the knowledge of the farm and of his territory. The consortia could define the minimum requirements for the farm that wants to participate in such a path, and for consumers-tourists, today unprepared, who decide to visit the farm.

ACKNOWLEDGEMENT

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[2] For a more detailed analysis of the reasons to visit and agricultural business, and on the advantages for the farms refer to Luca Savoja (2011 op. cit.).

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Wine routes for regional tourism development in Italy. A research in Calabria and Friuli Venezia Giulia Regions

S.Sivini, C.Parlato[1]

***Abstract* – Food tourism is considered one of the most dynamic and creative sector of tourism. In Italy, recent studies have underline that it has significantly grown. The aim of this paper, based on the results of an empirical research, is to discuss the potential of wine routes as an instrument to support the development of food tourism in rural areas, with a particular focus on two Italian regions. Wine routes are regulated by the national Law 268/1999 and they are intended as a tool that integrates economic local activities with the enhancement of local resources promoted by public and private local actors. In Italy, formally there are more than 170 wine (or food) routes but only few of them have been really implemented in a way that produced a development of the territories. Our research have compared the experiences implemented in a northern region, Friuli Venezia Giulia, and in a southern region, Calabria.**

***Keywords* – wine routes, food tourism, rural development.**

INTRODUCTION

Food tourism is a niche market that is considered one of the most dynamic and creative tourism sectors (UNWTO, 2012). Accordingly to Hall and Sharples (2003), is an experiential trip to a gastronomic region, for recreational or entertainment purposes, which includes visits to primary and secondary producers of food, gastronomic festivals, food fairs, events, farmers' markets, cooking shows and demonstrations, tastings of quality food products or any tourism activity related to food. Within the general notion of food tourism, wine tourism can be considered a sector that is growing rapidly in popularity in wine producing regions (Carmichael, 2005). Heritage, landscape and wine production are all considered attractive elements for this latter type of tourism (Van Westering, 1999).

The relationship between enogastronomy and tourism strengthens the concept of rural diversification that have become more reliant upon local planning systems (Marsden, 1995). Wine tourism can also be related to the new paradigm of rural development (Ploeg et al., 2000) and the concept of multifunctionality (OECD, 2006).

In this context, represent an opportunity for local actors to promote local resources through an integrated territorial strategy. Wine tourism has been largely developed in the form of wine routes. Berti at al. (2011) have defined them as itineraries, created by local actors, with the purpose of driving tourists in discovering wine production and including the opportunity to be accommodated within a farm, taste the culinary specialties of the place, buy local products and enjoy the landscape. This instrument is a direct expression of a systemic approach between agricultural, tourism and territory since it originates from the quality of food production, it represents a form of experiential tourism and it plays an important role in enhancing the intrinsic characteristics of each territory. At international level, several territories have become destinations for wine and food tourism thanks to an effective and efficient implementation of this instrument (Boatto, Gennari, 2001). However, in Italy, renowned for its culinary tradition, which role plays wine routes in supporting food tourism? These are regulated by the National Law 268/1999 and by specific regional laws.

The application of this legislation has favoured a proliferation of Wine and Food Routes in all the national territory; officially there are more than 170 wine routes but, according to recent researches (Cinelli Colombini, 2013), only few of them have produced significant effects on the local economy. Despite the peculiarities of Italian cultural and gastronomic heritage, wine routes seem to work in a disorganized way. The purpose of this paper, based on the results of an empirical research, is to discuss the potential of wine routes as a tool to support the development of Italian wine and food tourism. The resarch is part of the activities implemented by the National Operative Programme Project: Information and Mobility for Tourism (INMOTO) - ORganization of Cultural HEritage for Smart Tourism and REal–Time Accessibility (OR.C.HE.S.T.R.A.).

WINE ROUTES IN CALABRIA AND FRIULI VENEZIA GIULIA REGIONS

The research adopted a qualitative approach, comparing the practices implemented in two Italian region, one of the South, Calabria, and one of the North, Friuli Venezia Giulia (FVG). Data were collected through semi-structured interviews to the coordinators of wine routes, to farmers, wine makers and privileged witness in both regions. The research have highlighted many differences in the two experiences. In Calabria there are officially 12 wine routes that has been recognized by the Region. Our research have shown that just two of them are actually trying to operate in the territories, but both of them needs to implement more actions to really produce a development of wine tourism in the Region. The first is located, in the province of Cosenza, were a dynamic wine sector seems to be interested in trying to organize in a new, different way the wine route, fostering wine tourism in the area. The second one is located in Reggio Calabria Province, in the "Costa Viola" area; actually organize events and tours but the relationships among the local actors needs to be reinforced and more developed. It seems that most of them didn't really understood the potentiality of this instrument.

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The critical issues of Calabrian wine routes seem to be related not only to a lack in the promotion, as stated by the Regional Tourism Marketing Plan (2011), but to a lack of local governance. The routes have been created only for accessing to a regional financial support but local actors haven't been really involved in the ideation of them, as stated by an interviewed: *"calabrian wine routes has been a failure experiences because they haven't be promoted using a bottom up approach.. they don't have established relationships among the subjects involved"*.

Friuli Venezia Giulia (FVG) wine routes, on the contrary, seems to be well developed. There are actually 4 routes that are regulated by a regional law. Each route has a subject that is responsible of the territorial marketing strategy and in the meantime assure, to the associated members of the routes, strong support in training (for example courses on English and German language and on winery hospitality); in opening organization (it has been implemented a weekly opening shift system among the members of the route); in the organization of micro-events in the wineries and in the other structures associated; support in the bureaucratic procedures.

CONCLUSION

Wine routes can be effectively an instrument to promote food and wine tourism. A legislative framework, an attractive landscape, local typical products are not sufficient elements to establish a successful route. What our research has shown is that first of all wine routes have to be established with a bottom up approach, relying both on the cultural and gastronomic resources of the territory and on a strong cohesion among the subjects involved. FVG routes have been promoted by Friuli Venezia Giulia Wine Tourism Movement and some local innovative entrepreneurs. As an interviewed stated *"We worked hard to build consensus among the members, and then, to establish synergies, through meetings open to all the local actors, trying to involve the relevant agrifood, tourism and institutional local realities"*. In Calabria wine routes experiences what have been absent is the construction/reinforcement of local relationships among the actors involved. A local governance it hasn't be set up and the only activity implemented has been the creation of a sign-posted itinerary.

To build a sustainable and quality tourism offer of the territory it is fundamental to reinforce local identity through an intensive networking activity, promote training courses and establish common rule among the members associated, create a structured coherence of symbolic and material elements, design communicative strategies, organize winery visits and events. Wine routes that would be organized taking into account all this elements can produce a relevant social and economic impact on the territories.

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The difficult path of agri-tourism in Portugal

Lúcia Pato, Elisabete Figueiredo[1]

***Abstract* – Agri-tourism has been advocated as a particularly efficient way to promote the development of rural regions and the agricultural sector. Despite the importance of agri-tourism, a research conducted in the Douro region – a World Heritage Site known for its potentialities in terms of wine production, shows that agri-tourism is not so popular concerning rural tourism's typology. Additionally, the study carried out through a questionnaire-based survey, shows that on the one hand not all owners of agri-tourism have agriculture as their main professional activity and on the other hand not all promoters have agricultural activities as touristic activities in the unit. This scenario limits the potential of the touristic activity in terms of rural development.**

***Keywords* – Agri-tourism, rural development, owners profile, motivations.**

INTRODUCTION

Across Europe, rural regions face significant challenges, which are even more critical in the so-called peripheral and mountain areas. Here the problems often stem from a poor socioeconomic environment and a scarce and ageing population as well a rapid decline, even crisis in the agricultural sector (OECD, 2006). In this context tourism, particularly agri-tourism has been advocated as a particularly efficient way to promote the development of these regions and the agricultural sector. Diversifying a farm to include recreation and leisure activities for visitors, often labelled agri-tourism is increasingly adopted and is suggested to bring several benefits to farmers and to the rural population. Therefore it is not surprising that the last decades have seen a significant increase in the number of farm families diversifying their farm production (McGehee, Kim, & Jennings, 2007). On the other hand, agri-tourism also meets the needs of urban tourists who seek traditional hospitality, nature and cultural thematic holidays (Sharpley & Vass, 2006). These drivers, along with better access to rural destinations, have made agritourism popular for a growing number of farmers and the tourism industry (Choo, 2012).

In Portugal, like other forms of rural tourism, agri-tourism has its roots in the 1980s. The activity is officially defined as a hosting service in lodging units located on farms which allow guests to obtain knowledge of the farm's activity or participate in the farm work developed there (TP, 2008). National statistical data reveals however that the number of agri-tourism units has slightly decreased over time (Pato, 2012). Moreover, a research conducted in the Douro region – a World Heritage Site known for its potentialities in terms of wine production shows that agri-tourism is not so popular in terms of touristic typology. Additionally the study carried out through a questionnaire-based survey shows that on one hand not all promoters of agri-tourism have agriculture as their main professional activity and on the other hand not all promoters have agricultural activities as touristic activities in the unit. This scenario limits the potential of agri-tourism in terms of the rural development.

The aim of this study, therefore, is to highlight the little expression of agri-tourism in the region; explore the characteristics and motivations of the owners of agri-tourism units as well present their perceptions concerning the relationship between agriculture and tourism. Leisure activities offered in the units are also presented.

METHODOLOGY

The present work is the result of a broader investigation, inserted in a co-financed doctoral project by the Portuguese Fundação para a Ciência e Tecnologia(FCT).The data about the suppliers' socio-demographic characteristics and motivations to start the business and about owners' perceptions concerning the relationship between agriculture and tourism and corresponding activities implemented was col-lected with a questionnaire-based survey in 2010, addressing owners of agri-tourism units in the Douro Region (DR). In order to register different types of information, apart from the answers to the questionnaire, interviews were previously scheduled and the questionnaire was filled through face-to-face contact in the agri-tourism unit.

Although it was our intention to apply the questionnaires to all the agri-tourism owners in the region (a total of ten), due to unavailability of some, only six questionnaires were applied which represents a response rate of 60%.

After gathering the information, we performed data analysis based on simple and exploratory statists.

RESULTS

Despite the popularity of Douro in wine production and tourism, only 11% (ten) of units are officially registered as agri-tourism units (table 1).

Table 1. Type of rural tourism lodging in Douro Region (2010)

Type of unit	Number	Percentage
Rural tourism	33	39
Country houses	19	22
Tourism in a manor-house	17	20
Agri-tourism	10	12
Rural hotels	5	6
Tourism in a village	1	1
Total	85	100

Source – Our source

The sample of promoters shows a slightly higher number of male respondents (four), with most falling within the age range between 45-54 and 55-64 years and half of them with higher education. It is worth mentioning that four promoters have agriculture as the main professional activity, but in all the cases the main source of income comes from outside the tourism unit

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(table 2), which reveals the moderate profitability of this type of touristic business.

Table 2. Sociodemographic characteristics of the promoters

VARIABLES	N	%
GENDER		
FEMALE	2	33
MALE	4	67
AGE (YEARS)		
<34	1	17
35-44	2	33
45-54	2	33
55-64	1	17
LITERACY		
3RD CYCLE (7-9 YEARS)	1	17
SECONDARY SCHOLL	1	17
HIGHER EDUCATION	3	50
DIDN´T ANSWERED	1	17
MAIN PROFESSIONAL ACTIVITY		
RELATED WITH AGRICULTURE/AGRI-TOURISM UNIT	4	67
OTHER	2	33
MAIN SOURCE OF HOUSEHOLD INCOME		
TOURISM UNIT	0	0
OUTSIDE THE UNIT	6	100

Source – Own survey data (our source)

Promoters were also asked about the business profitability. Five of them argued that it is (only) moderate and only one said that it is quite profitable.
In terms of motivations to start the agri-tourism business, four promoters mentioned issues concerning the need of diversifying the economic activity, one promoter mentioned issues related the house's preservation and another one referred issues regarding business opportunity. For these answers, one might expect a strong connection between agriculture and tourism. However, results show that half of the promoters (three of them) doesn´t see "great synergies" between the two activities. Actually, if agriculture, particularly the existence of vineyards is a factor in attracting tourists, promoters are reticent regarding other synergies.

For this reason, it is not surprising that (not all) promoters have entertainment activities related with farming activities. Only four promoters said to have some kind of farm activities as touristic activities in the unit (Figure 1). These promoters are obviously more active in developing touristic products, trying to make connections between the two activities.

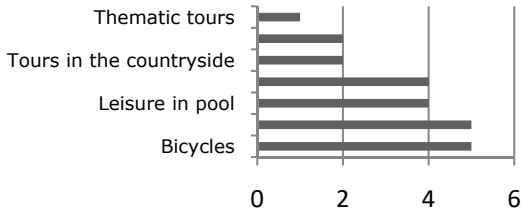

Figure 1. Entertainment activities in the agri-tourism unit

Nonetheless it is interesting to note that all promoters sell some agricultural products in the unit. These include, most of the times, bottles of Porto wine and other food products such as olive oil and honey.

CONCLUSIONS

This study provides an original contribution to knowledge because, with few exceptions, agri-tourism is a field that seems to be neglected by researchers, mainly in Portugal. It is worthwhile to mention that apart of some contribution from agritourism in terms of farms' economic diversification, taking into account its growing demand, the affirmation of agri-tourism as a touristic product linked to agriculture and farm activities has been difficult to implement. Proof of this, is the fact that not all promoters are aware of the essence of agri-tourism, that is, the possibility of having tourists interested and participating in agricultural activities, making them actors and an active part of the activities. Apart of the need of more leisure activities related with farms and the rural culture itself, it's necessary to involve rural population and even other local farms in all the process of touristic offer, since the agri-tourism promoters establish few relations with agriculture firms. In order to get an in-depth knowledge about the involvement of promoters and tourists with agri-tourism, it would be interesting to extend this study to other regions in Portugal, using a qualitative approach.

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Consuming Landscape: an investigation of eco-economic development strategies in rural areas

F. Contò, A. Conte, M.A. Fiore, S. Djelveh[1]

***Abstract* – The choice of an economic development trajectory is specifically urgent for rural economies currently dealing with the challenges of a continuous process of peripherality, agricultural decline, and consumer volatile demand especially in those places where the rural domain is no longer exclusively tied to food production but to the consumption of landscape to meet wider urban consumer demands. Key elements are the valorization of local assets, a shift from subsidy driven development to more variable development. The aim of this article is to investigate which sorts of strategies and pathways for eco-economic development can be witnessed in rural area underlining the role of multifunctional land use for a sustainable development. The analytical framework of the 'rural web' has been used to understand the dynamic interplay between different domains of rural development. In this model, rural development is the unfolding of a rural 'web' in the territorial context. Theoretically, the model captures the interrelations between six conceptual domains: endogeneity, novelty, production, social capital, market governance, new institutional arrangements and sustainability. This article gives insight to develop a model by conceptualizing eco-economic strategies as pathways – which emerge through the different mobilizations of the rural web – and their influence, especially of multifuncionality, on rural change. The article concludes by identifying some consistent parameters for understanding the dynamic complexity of rural development and by showing a shift from an agricultural-based development to a more integrative rural development.**

***Keywords* – New rural paradigm, eco-economy, rural web, integrative rural development, multifunctional land use**

INTRODUCTION

The aim of this article is to investigate which sorts of strategies and pathways for eco-economic development can be witnessed in rural area and to test the analytical framework of the 'rural web' as instrument to understand the dynamic interplay between different domains of rural development in Apulia region.

We investigated the complexity of sustainable rural development studying some of its key theoretical aspects. First of all we analyzed the three main driving forces involved in rural development and in new markets research, identified in previous studies.

Firstly, cost-price squeeze in agriculture. Farmers and land-holders are facing with the process of a continuous squeeze between the prices and costs associated with land-based production and the growing market and consumer expectations of high quality or natural rural resource-based goods and services. This encourages more "value-adding" and multifunctionality or quality of life improvements in rural life (Marsden and Sonnino, 2008; Van Der Ploeg and Marsden, 2008).

Secondly, crises in agriculture, as environmental problems in agriculture, animal diseases and food scandals that influenced the image of agriculture. Finally, the growing urban demands for rural goods and services with the entry of new actors that are taking root in rural areas, also diversifying and complicating the rural arena, raising questions about more traditional conceptions of rural space (Frouws, 1998).

In the search for new models of sustainable development, as a response to these challenges, different trajectories which underpins alternative models for economic growth and sustainable development can be identified. We have decided to consider: the bio economy and the eco-economy.

The rural "eco-economy" can be defined as "the effective social management reproduction of ecological resources (combinations of natural, social, economic and territorial capital) in ways designed to mesh with and enhance the local eco-system rather than disrupting and destroying it" (Kitchen and Marsden, 2009:294). The bio-economy has been defined as "that part of economic activities which captures the latent value in biological processes and rebewable bio-resources to produce improved health and sustainable growth and development (Horlings and Marsden, 2014). The choice of a bio- or eco-economic development trajectory is specifically urgent for those rural economies currently dealing with the challenges of continued peripherality, agricultural decline, low levels of economic activity and expectations, and volatile and variable consumer demand. So, the purpose of our study is to describes how different trajectories for rural eco-economic development can be analysed by using the model of a "rural web" that provides a way of harnessing diversity and "photographs" the configuration of six dimensions in rural development (Van Der Ploeg et Al., 2008), by empirically describing rural resources, actors, activities, linkages, transactions, networks and positive externalities and, theoretically, capturing the interrelations between six conceptual domains: endogeneity, novelty, production, social capital, market governance, new institutional arrangements and sustainability (Table 1).

Table 1. Domains of rural development (Horlings and Marsden, 2014)

Endogeneity	The degree to which rural economies are (a) built upon local resources; (b) organised according to local models of resource combination; and (c) strengthened through the distribution and reinvestment of produced wealth within the local/regional constellation

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Novelty	New insights, practices, artefacts and/or combinations (of resources, technological procedures, bodies of knowledge, etc.) that carry the promise that specific constellations function better
Social capital	'[T]he norms and networks that enable people to act collectively' (Woolcock and Narayan, 2000) or, more specifically, the ability of individuals, groups, organisations or institutions to engage in networks, cooperate and employ social relations for common purpose and benefit
Market governance New institutional arrangements	Institutional capacities to control and strengthen existing markets and/or to construct new ones New institutional constellations that solve coordination problems and support cooperation among rural actors
Sustainability	'[T]he existence of the social and ecological conditions necessary to support human life at a certain level of wellbeing through future generations' (Earth Council, 1994)

This article, on the basis of previous studies' results, will attempts to apply the rural web model on Apulia region, conceptualising eco-economic strategies, emerging through the different mobilisations of the rural web and their influence on rural change. We choose this model because of its usefulness on reshaping the rural whilst enlarging its competitiveness and enhancing the quality of life (Figure 1).

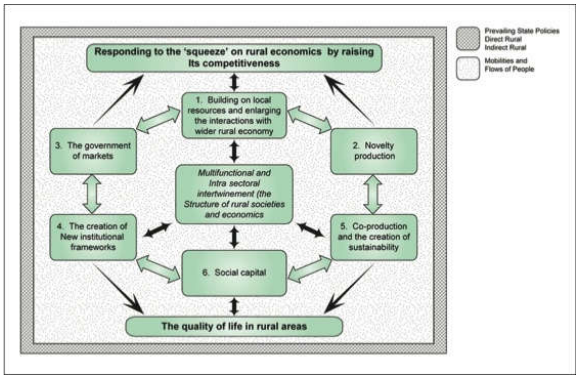

Figure 1. The rural web (Horlings and Marsden, 2014)

EMPIRICAL ANALYSIS

What we are going to do is to identify different eco-economic pathways in Apulia, using a case study analysis. Selected case studies will be analised in the context of exploring eco-economic strategies for rural development with the goal to identify the variety of development pathways that emerged through the different mobilisations of the rural web.

On the basis of previous studies, we will use three principal pathways to analize Apulian case studies:

1. (Niche-) innovation, which specifies the development of new product-market combinations, mostly in food sector, based on the different ways in which the relations between "governance of markets", "novelty" and "sustainability" take shape;
2. New interfaces, which refer to the inter-play between governance of markets and institutional arrangements;
3. Re.orientation on territorial capital, based on the valorisation of local/regional assets or rooted in social-cultural notions of regional identity, with the aim to integrate different sectors, especially agri-food sector with tourism, health and leisure ones.

CONCLUSION

By exploring and qualifyng the new rural development paradigm in Apulia region, we would like to begun to show some of the key developmental processes and to give a more specific insight into the dynamic ways in which the governance of markets takes shape within the rural web. We expect that throught Apulian case studies analysis we will confirm, as previous European studies do, a gradual shift from an agricultural-based development to a more integrative, place-based approach including a wider vector of non-agricultural actors. An approach, based on a eco-economically forms of competitiveness able to create new social and economic spaces in which more sustainable actions and practices have the capacity to develop, facing the problem of competition within market dominated by mass-produced and cheap products. Another aspect we expect to underline is the interconnectedness of cities with their hinterlands as an important parameter of a place-based integrative rural approach, in which new urban-rural interfaces established became new drivers for eco-economic strategies, leading to more multifunctional forms of land use. Finally our study may give an important contribution to the development of rural and regional policies, that are supposedly becoming more "place based", and therefore spatially integrative.

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Fincas agroturisticas de Nicaragua

F. Fratto, A. Galasso, C. Hausmann[1]

***Abstract* – "Fincas agroturisticas de Nicaragua" is a "people project" based on a public-private partnership involving the Nicaraguan Institute of Tourism (INTUR) and the main farmers' organisations: Feniagro, FENACOOP and Renitural. The objective is to contribute to the setting up of a competitive and sustainable "agri-tourism supply" to improve and integrate the tourist market of Nicaragua. The beneficiaries are 120 small and medium rural enterprises, with benefits for more than 40 thousands people living in the rural areas. A team of Italian experts in rural tourism was contracted by INTUR, in collaboration with the Italian Ministry of Agriculture, to run a preliminary analysis. The final assessment showed a strong identity and authenticity in the way that the fincas are managed. The job is based on the principles of sharing, joint participation, and shared responsibility. But "identity and spontaneity", may not be enough and need to be accompanied by knowledge and skills for the development of high quality standards.**

***Keywords* – social sustainability / responsible tourism / rural development**

INTRODUCTION

As part of the strategic plans aimed at the "development of production and trade for wealth and income generation and poverty reduction", the project is a national priority and a response brought about by the GRUN (Gobierno de Reconciliation y Unitad National - Reconciliation and National Unity Government), to the demands of those sectors such as small farmers and farmers' cooperatives which are traditionally excluded from the tourism-generated benefits.

The underlying purposes are: to increase productivity, competitiveness, complementarity, environment protection and gender equality consistently with the goals of the PNDH - Plan Nacional de Desarollo Humano) and to contribute to the setting up of a competitive and sustainable "agri-tourism supply" to improve and integrate the tourist market of Nicaragua.

The project is based on a public-private partnership involving the Nicaraguan Institute of Tourism (INTUR) and the main farmers' organisations: Feniagro, FENACOOP e Renitural[2], representing more than 700 farmers' cooperatives spread over the national territory.

The beneficiaries are 120 small and medium rural enterprises of traditional producers, farmers' cooperatives, artisans associations, indigenous communities, youth and women organisations with both direct and indirect benefits for more than 40 thousands people living in the rural areas, to be supported – by diversifying the traditional farm production activity (through the agri-tourism) and implementing sustainable production systems – in reducing migration from rural to urban areas, creating jobs and increasing the income.

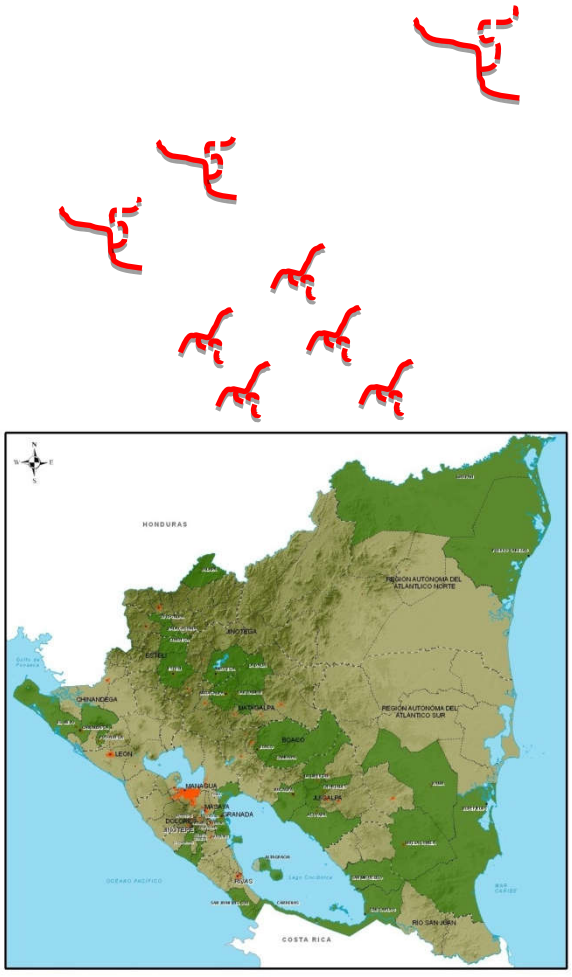

Figure1. Map of the rural areasinvolved in the project.

The project's specific goals are:

- Configure a differentiated and competitive rural tourism to promote the decentralization of the national tourism and diversification of tourism products in Nicaragua.
- Support the strengthening of institutional and technical capacities of the sector and the

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[2] FENIAGRO: most representative organisation in the agro-industrial cooperative sector in Nicaragua, with 126 associated cooperatives and 26 thousands members (6 thousands of which are women).
FENIACOOP: cooperatives organisation with the largest nationwide presence, counting more than 6 thousands associated cooperatives and a little more than 24 thousands members (among which 7 thousands are women) and representing an agricultural and eco-tourism supply with a great potential.
RENITURAL: umbrella organisation gathering up 55 rural tourism initiatives which provide employment to 300 families of campesinos and are for the most part in a develop-ment process peak. Its main field of activities are eco-toursim, sustainable tourism, rural tourism and occasionally adventure travel.

participation of beneficiaries and partners in the development of a sustainable and fair tourism in Nicaragua.

- Promote the development of sustainable tourism that guarantees the quality of rural and tourism development of natural and cultural resources of the environment.
- Promote tourism Agro Products with community and local approach of authentic experiences and quality, enabling positioning in the national and international tourism market.

PROJECT STRUCTURE

The project has five components:

1) Institutional and social Strengthening for a fair development;
2) Improvement of the productive agri-tourism infrastructure;
3) Creation of technical capacities for the development of an agri-tourism supply;
4) Tourism sustainability;
5) Tourism Promotion and Marketing.

Component 1 - Institutional and social Strengthening for a fair development - The focus is to support the strengthening of the institutional framework for the development of agri-tourism thus generating capacity of the project partners (both technical and financial) and the technical capabilities of INTUR (statistical system for rural tourism, baseline of the intervention and tourism quality system), in coordination with other entities of SPAR. Output: improved technical capabilities of the Nicaraguan Institute of Tourism for the implementation, evaluation and monitoring of strategies to promote and develop rural tourism in Nicaragua; improved participation of excluded groups (women, youth and indigenous) in the development of competitive and inclusive agri-tourism.

Component 2 - Improvement of the productive agri-tourism infrastructure - The purpose is to accompany the beneficiaries of the project in improving the productive and tourist infrastructure of their business, which allows them to rescue, equip and properly handle the traditional structures of the farms in Nicaragua, as well as the integration of their production and rural culture in sustainable development, setting a differentiated and competitive rural tourism supply aimed at the target markets. Output : Create and run a funding mechanism and technical assistance for the development of productive agro tourism infrastructure.

Component 3 - Creation of technical capacities for the development of an agri-tourism supply – The tourism product is the result of the enhancement of natural and cultural resources, expressed both in the hardware of tourism (facilities, infrastructure) and in the elements of the service provided, so that improving the delivery of services is vital to increase tourist spending in local communities, extend the benefits to different productive sectors, increase visitor satisfaction and build loyalty to the destination. Output: Improved technical capacities of agri-tourism and participation of women and excluded groups such as entrepreneurs and employees of rural tourist micro, small and medium-size enterprises.

Component 4 - Tourism sustainability - It involves elements of development needed to establish a "tourism whose actions are integrated into the environment with the local population, and are seeking sustainable exploitation avoiding the speculation as the model of maximum profitability over time and space, which has been so common in conventional tourism". Output 4: Increased the integrated and sustainable management of Agri-tourism farms of Nicaragua.

Component 5 - Tourism Promotion and Marketing - the Agri-tourism farms in Nicaraguan nature and open spaces must become a priority for tourism promotion. It involves establishing strategic alliances with tour operators, as well as other national and international tourism businesses, taking advantage of tourist flows in most developed destinations, searching more forms of intermediation and promotion as well as promoting a positive and distinct image. Output 5: Agri-tourism positioned in national and international tourism markets.

THE ITALIAN MISSION (OUR MISSION)

To set up and implement component 3 of the project, a team of Italian experts in rural tourism was contracted by INTUR, in collaboration with Italian Ministry of Agriculture. The Italian technicians have visited some farms with different stages of development in the departments of Matagalpa, Rivas, Chinandega and Carazo.

The aim of the visit was to draft a preliminary list of training and information initiatives related to the improvement of the productive agri-tourism infrastructure, the capacity building for the development of agri-tourism supply, and the promotion and marketing.

FINAL ASSESSMENT AFTER THE VISITS

A strong identity and authenticity emerges in the way fincas are managed, with the perception of an orientation towards quality and sustainability (economic, environmental and social). The work is based on the principles of sharing, joint participation and a shared responsibility.But "identity and spontaneity", may not be enough. The risk is to confuse spontaneity with improvisation while spontaneity can only be the result of an accurate planning that leaves the spontaneous elements free to emerge exactly because the variables leading to potential malfunctions are kept under control. Therefore knowledge and skills are needed for the development of higher standards and to differentiate and diversify. Basic requirements:hygiene and food safety, characterisation of hosting facilities andhigh level in food quality.The possible connotations – characterisation of tourism in Nicaragua: responsible, environment / Biodiversity, adventure, ethnic.

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Pedagogical rural tourism promoting the multifunctionality of agriculture: analysis of three experiences developed in Brazil

Marcelino de Souza, Ivo Elesbão[1]

***Abstract* – Pedagogical rural tourism is characterized as a set of educational activities undertaken in the context of rural properties using agricultural and livestock activities as well as natural and cultural resources with small improvements in the existing infrastructures as a didactic resource. The objective of this research was to analyse the educational role played by agriculture based on the pedagogical rural tourism and its relations with social, environmental, economic, cultural, and health and food safety functions. For that purpose, 8 entrepreneurs in Santa Catarina, 5 entrepreneurs in the Federal District, and 9 entrepreneurs in the State of São Paulo were interviewed. The analysis of the data showed that the practice of this kind of activity has a set of features that benefits several aspects: economic ones – allowing the owners to complement their household income; social ones – related to the improvement of owners' self-esteem and the recognition by the community of the work developed; educational ones – by enabling school groups the exposure to knowledge and practices associated with rural and natural environments; environmental ones – evidenced by the concern to promote environmental education; and, food security ones – from direct contact with activities that promote the recognition of the origin of the food consumed.**

***Keywords* – Rural development, educational activities, diversification, multifunctionality.**

INTRODUCTION

The notion of multifunctionality of agriculture understood as "all products, equipment and services created by agricultural activities for the benefit of the economy and society" (Losch, 2004, p. 340) has allowed the recognition of other potentialities in rural areas and agricultural activities that until recently had not been valued by society.

Blanchemanche et al. (2000) define multifunctionality of agriculture as a set of contributions of agriculture focused to economic and social development. Such contributions may include production, food security, and maintenance of the territory, environmental protection, and economic and social rural preservation by the diversification of activities.

The notion of multifunctionality covers different aspects that are more or less valued in accordance to the point of view of whom is analysing it. These aspects show, in a certain way, the vagueness and complexity present in this term that besides presenting various interpretations has also caused several discussions regarding the term "agriculture" and the functions associated to it.

Regarding it, Saborin (2005) draws attention to the fact that the multifunctionality of agriculture is not a consolidated concept and, as any large and comprehensive notion, demands a multidisciplinary analysis which encompasses different fields of science.

The differences begin with the two approaches presented by the Organization for Economic Cooperation and Development (OECD). Whereas the first one considers the multifunctionality as a feature of the production process, the second recognizes the agricultural activity as an activity capable of fulfilling multiple functions (OECD, 2001). These two approaches show the need of thinking about the functions performed by the agriculture which, in the current context, acquire significant relevance especially in the framework of public policies for rural development.

Marsden and Sonnino (2008) highlight three basic conditions of a multifunctional agriculture: 1) increase in income and employment opportunities for the agricultural sector; 2) contribution to the construction of a new agricultural sector policy that matches the needs and expectations of society; and 3) redefinition and reconfiguration of rural spaces inside and outside rural properties.

With regard to the functions performed by the agriculture and rural spaces, there is a diverse set of aspects that basically involve three functions: social, environmental and economic functions. These aspects will make it possible to better understand the relationships that can be established between the functions and the practices associated with agricultural activities, such as the educational rural tourism which uses agriculture and livestock as guiding elements in the development of educational activities.

In this sense, considering that such functions are materialized especially from the activities carried out in rural areas, we consider educational rural tourism under the bias of multifunctionality a relevant strategy which emerges in the context of discussion on rural development. The main objective of the research was to analyse the educational role played by agriculture from the educational rural tourism perspective and its relations with social, environmental, economic, and cultural as well as health and food safety functions.

METHODOLOGICAL ASPECTS OF THE RESEARCH

The present research used as empirical basis three experiences developed in the Distrito Federal (Rural Tourism and School - Echoing) and in the states of Santa Catarina ("Viva Ciranda" Project) and São Paulo (Pedagogical Rural Tourism of São Paulo State).

The following technical and methodological procedures were used to achieve the goal of the research: bibliographical research, documentary

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research, and finally, data collection in the field with semi-structured interviews. The interviews were carried out with landowners and with those responsible for the development of educational rural tourism activities.

In the "Viva Ciranda" Project in the city of Joinville, data collection was conducted in the second week of March, 2013 with the participation of eight landowners who develop educational activities for schoolchildren.

Initially, in the Federal District six landowners of properties which take part in the project "Rural Tourism and School – Echoing" were selected to answer the questions. The interviews were sched-uled and the fieldwork was conducted between February 26th and March 1st, 2013.

In São Paulo the data collection occurred in the period from January to August, 2013 where nine properties that develop educational rural tourism were visited.

Before the implementation of the interviews a pre-test of their script was conducted to adjust the relevance of the questions and their order. The interviews were recorded, transcribed and the data categorized for analysis. It is worth stating that we did not use any specific software for the analysis of the interviews. The second section should explain the methods you used, so that the readers have clear information on how (and where) the data were collected and what methods were used to analyse the data.

RESULTS OF RESEARCH: THE MULTIFUNCTIONALITY OF THE EDUCATIONAL RURAL TOURISM

Data analysis showed that the practice of this kind of activity has a set of features that benefits several aspects: economic ones, allowing the owners to complement their household income by adding value to their agricultural products and the offer of services developed in the properties; social ones, related to the improvement of owners' social self-esteem and the recognition by the community of the work developed in the properties; educational ones, by enabling school groups to be exposed to knowledge and practices associated with rural and natural environment; environmental ones, evidenced by the concern to promote environmental education; and also food security ones, from direct contact with activities that promote the understanding of the origin of the food.

The concern with environmental issues and awareness regarding the use of natural resources are factors pointed out in most interviews. As part of the routes for visitation are organic farming products, healthy eating, and management of water resources, ecological explanations and appreciation of the natural area. The involvement with the residents of the rural areas and with the life in the countryside is also in focus at some properties. However, there is still much to be explored in the activities that are being or can be offered in the surveyed enterprises.

CONCLUSION

Given these findings, it is confirmed the multifunctional character of agriculture and of rural areas from the practice of educational rural tourism. At the same time, they highlight the role played by rural properties in the context of education.

More than a commercial activity for the enter-prises, the educational rural tourism has a function highlighted in the teaching-learning process, since it is a form of re-discussing in the rural properties the contents worked in the classroom.

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Agritourism and territorial framework in the northern Salento (Apulia region, Italy)

Rinaldo Grittani,Vincenzo Fucilli, Claudio Acciani, Francesco Bozzo, Francesco Petrillo, Ruggiero Sardaro[1]

***Abstract* – The Territory Landscape Plan of the Apulia Region (PPTR)focuses on rural areas and agricultural sector, putting them in a holistic local and socio-economic context. This strategy isimplemented through the town-country pact, one of the five local projects proposed by the PPTR.**

The aim of the research is the study of the context and specificity of agritourism in Ostuni and Fasanocoastal areas (northern Salento), in which natural beauties, such as rural and coastal landscapes, coexist, characterized by ancient olive groves, historical rural houses and charming towns.

In particular, the study analyses this rural context by means of the relationship between agritourism and territorial framework in order to check the sustainability of the development processes and their consistency with the programmatic guidelines of the PPTR.

Qualitative approacheshas been used, such as semi-structured interviews and photographic material.

***Keywords* – Planning; Agritourism; Landscape; Photography.**

INTRODUCTION

In recent years in northernSalento(Apulia region, Italy) is emerging a sustainable tourism connected to rural landscape,characterized by ancient olive groves and farm holidays, based on hospitality, usability of the natural and cultural resources, local traditions, etc.

The study aims to analyse the rural tourism sectorthrough the farm holidays ofFasano and Ostuni, in the plain of the ancient olive trees. The goal is to verify the strategies of consolidation of the tourism sector in the area and its effective sustainability, with reference to the guidelines of the new PPTR, which places the study area as part of the "MurgiadeiTrulli" landscape.Furthermore, the ancient olive trees of the plain arepreservedby the regional law 14/2007, which considers these plants as common heritage.The PPTR highlights some critical aspects that may compromise the integrity and value of the ancient olive groves landscape. Among these, the dynamics of urbanization and transformation of coastal areas, especially related to the touristsector, but also the proliferation of second homes and the presence of linear infrastructures, such as the road and the rail running parallel to the coastline, which break the fruition of the rural landscape.

METHODS

The study is organized into two phases. The first one consists in the collectionof information on the plain of the ancient olive groves, in particular plans and programs that impact on the area, influencing its transformation. This analysis was carried outthrough the Territorial Information System as well.

The second phase is based on surveys using qualitative approaches: inspections, walks, photographic interpretation of places, semi-structured qualitative interviews. This methodological approach pays particular attention to photography. It is not only used as iconographic documentation to be attached to the text, but becomes a research tool (Bauer and Gaskell, 2000; Faccioli and Losacco, 2010) useful in interpreting the rural landscape, as well as the natural and anthropic elements that connote it. Moreover, it allows interviewing witnesses and interacting with local actors through qualitative interviews and stimulus photos (Beilin, 2005; Parmeggiani, 2006).

RESULTS

Analyses, surveys, inspections and photographic interviews have highlighted differences within the study area, enough to assume the existence of two distinct tourist ambits.

In the ancient olive groves plain of Egnatia, Savelletri and Pettolecchia, in the Fasano territory, an excellence tourismis consolidating, with extra-luxury spa, modern equipment and golf courses. The recent building of the "Borgo Egnazia"resort in 2011 has consolidated and encouraged thisquality tourism. Many structures in the area are not farm holidays but hotels and resorts, so that *"a high accommodation capabilityconnected to sea and luxurious facilities has been developed, even though the connection to the land is by nowalmost disappeared, so it is improper referring to rural tourism"* (Giacomo and Ruggiero, agronomists).

This tendency has led to the global circuits of the luxury tourism, but entailing choices and actions not always consistent with the vision of the PPTR. Most of entrepreneurs show little regard for the landscape and territorial context: *"The key element of this area lies not only in the sea and in the ancient olive groves landscape. Investments of entrepreneurs are essential in a tourism development project as well, which employs hundreds of people in the summer season"* (Annamaria, owner of a resort).

In addition, the local administration seems little aware about the importance of protecting and enhancing these rural areas: *"The relation with the local administration is complicated and unfortunately*

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Fasanodoes not offer very much for the rural tourism" (Annamaria, owner of a resort).

However, there are interesting experiences of cooperation between public and private sectors, such as the agreement on the management of the archaeological site "Lama d'Antico"[2], that however should be better defined for the revival of the rural tourism in the area.

On the contrary, in the remaining part of the plain the collaborative processes triggered seem more profitable and effective. In particular, the south-easternof the plain, in the municipality of Ostuni, seems characterized by a widespread rural tourism, more connected to the landscape context andcharacterized by heterogeneous farm holidays and rural houses. This area is strongly influenced by the "Regional Park of the Coastal Dunes", whose activities for the defence of nature and sustainable development are numerous and effective, affecting outside the boundaries of the park as well.Noteworthy is the ability of the park in theelaboration of projects and the gathering of EU and regional funding, including those for the development of the sustainable tourism[3].

These aspects allow the involvement of operators and local associations in the projects' activities: *"The Park of the Coastal Dunes is certainly an important driving force for the area and for my farm. Now, many people and tourist agencies contact me directly, even in January. In my farm I organize walks and visits in the hypogeal oil mills and the ancient olive groves"* (Corrado, owner of a farm).

It is to be hoped that the business practices of the area could start cooperation models between institution and local actors, in order to benefit the sustainable management of landscape andtourism (Petrillo and Tartarino, 2014). Programs and ongoing initiatives, such as the implementation of measures for the Via Traianaby the Environmental and Cultural System (SAC) and the candidature of the ancient olive trees plain in the territories of Fasano, Monopoli, Ostuni and Carovigno as UNESCO World Heritage, lead in this direction.

Hence, while a few years ago these two areas were very similar, the recent transformations are creating and exacerbating great differences. The area of the luxury tourism seems more exposed to anthropic pressures and to the risk of transformations that could compromise the integrity of the rural landscape.

DISCUSSION AND CONCLUSIONS

The differences between the two areas in the plain of the ancient olive groves are significant, especially considering that they are not the result of different municipal policies or specific town planning strategies.

The increased vulnerability of the landscape in the Egnazia, Savelletri and Pettolecchia area seems the result of a more "aggressive" activity through local entrepreneurs in the tourist sector. On the other hand, noteworthy is the absence of control from the Park of the Coastal Dunes. Some influence is probably wielded also by the linear infrastructures that in the luxury tourism area, as far from the coast, do not prevent phenomena of urban sprawl in the rural territory, as in the remaining part of the plain.

This tendency is somewhat visible in the map of the *"town-country pact"*, one of the five integrated projects through which the PPTR intends to pursue its strategic vision. Its scenarios could offer a solution to the precarious equilibrium of the landscape in the area, sincea multifunctional rural park is planned for the protection of territory. The implementation of this strategy could prevent the ongoing pressures, avoiding the jeopardizing of the current landscape balance and the negative consequences for the district of the luxury tourism.

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[2] The Rupestrian Park "Lama d'Antico, San Giovanni and San Lorenzo" is owned by the City of Fasano and entrusted for 50 years for its preservation and promotion to the "San Domenico" Foundation and to the "Coop A.R.S." Company.

[3] For instance, the "LIVE YOUR TOUR" project, about the sustainable tourism; the "NAT PRO" project, on the naturalistic reclamation and fruition of the natural coastal areas; the "MEET" project, for the Mediterranean experience of ecotourism; the adhesion to the European Charter for Sustainable Tourism, etc.

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The demand for Italian Agritourism

Sandro Antenucci, Davide Barillà, Roberto D'Auria,
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***Abstract* – Nowadays the Italian model of agritourism is the focus of interest for many countries in the world for its ability to exploit local resources.**
An effort to harmonize design and communication of the quality was necessary therefore. This project was launched in 2013 by the technical working group inside ISMEA. In order to carry out the project, characteristics and trends in domestic and foreign demand were studied in depth. The investigations carried out by Ismea have shown that the demand of an urbanized society is particularly complex also because it comes out from sometimes contradictory elements with one another. The potential user often keeps in his heart deep roots in the past that have to coexist with new contexts and with modern concepts of life. In some cases, he/she believes to search the nature, but does not realize that his purpose is a self-feeling of alternative and original behaviors.
***Keywords* – Agritourism; Market segmentation; National Committee; Quality classifying scheme**

WHAT ITALIAN AGRITOURISM IS

Italian Agritourism is a really original form of tourism, it is an original way of experiencing the countryside, a model with peculiar characteristics, different from any other country. It is no coincidence that Italy is the only European Country with a specific legislation for the enhancement of the rural heritage and the national territory.

Its unique feature is that it can only be practiced on farms and by farmers, who are its true protagonists. Agritourism, often referred to as agrotourism or farm holidays, has by now become a cultural phenomenon that is spreading to many countries in the world, particularly in Europe, thanks to the great attraction the countryside holds for an increasingly urbanized society. Thus the farm, surrounded by greenery and rural landscape, becomes a place for a complete but simple rural experience, far from the formalities and bustle of the city.

Along with informality, the farm offers a sense of freedom from rules and from stress. In short, agritourism is always a process of familiarization with agriculture and with aspects of it that are today unknown to city dwellers.

Agritourism is also an opportunity to meet others: people who work on the farm, the other guests, people who live in the area, animals. Encounters of this kind make agritourism a very different experience from hotel accommodation or other tourist facilities.

AGRITOURISM PROPOSALS

The agritourism experience means close contact with agriculture, seasons, production processes, crafts and trades, but also with traditional rural architecture, houses of stone, brick and wood, including a wide variety of styles and models.

Agritourism means a stay in the country, either in rooms, apartments or complete housing units made available to guests; country dining with simple ingredients and cooking which can sometimes also be highly refined; a wide variety of outdoor activities (walking, hiking, horseback riding, cycling, fishing or simply sunbathing). Many farms strive to offer a complete range of services and activities, while others specialize, offering only accommodation or just the opportunity to eat at the farm.

The services offered by a growing group of farms tend to lean toward the world of well-being, while others give much attention to families and children, often combining tourism with educational activities.

Other farms instead base their philosophy on attention to the environment and the preservation of local history and culture. Some farms become actual museums that feature agriculture and the countryside, while still others present themselves as authentic centre for the preservation of plant and animal biodiversity. Today, the general trend is to offer guests a full range of services, but each farm is distinct and builds an original package of services that sets it off from the others.

FOOD AND WINE

Eating on a farm is a unique experience. Farm dining is very diverse because it changes depending on the location, the seasons and what the individual farms offer. Some farms choose to offer their guests a basic menu with a limited choice of dishes, while others develop extensive and articulated menus that include special packages (for children or for special diets). There are farms that provide picnic areas where you can buy farm products and cook your own meal, and others that combine meals with traditional cooking courses. Many farms are now excellent cooking schools, based on inimitable tastes and flavours, and discovering the techniques and little secrets of the production processes right there where they take place.

Everything is built around local products that mainly come from the farm and the surrounding territory. Eating local products means contributing to the conservation of the environment and keeping the local territory inhabited and vibrant.

The real competitive advantage of agritourism, very difficult to achieve in other types of dining, is the freshness of the production – just picked – along with other locally produced raw materials that are carefully checked in every phase of processing. This translates into tastes and flavours that are very hard to imitate and much appreciated by guests.

It is well known that Italy has the broadest range of typical local foods in the world. In addition, it boasts the largest number of high quality products that carry the European labels PDO and PGI (at present 248), 448 wines of origin, and many thousands of traditional food products (that is, typical products with at least a 25-year history, surveyed and included on a national list). It is in agritourism that these specialities find their chosen place of production and consumption.

[1] Technical and Scientific Working Group Ismea - National Committee for Agritourism

AGRITOURISM: WHERE AND WHY

Thanks to agritourism, which today has more than twenty thousand operating farms, the Italian countryside has been able to save a very significant number of valuable historic farm buildings and preserve traditional agriculture in areas difficult to cultivate. A large percentage of tourist farms are in fact located in hilly and mountainous areas where large-scale agriculture requiring vast expanses of land and heavily mechanized production systems cannot be developed.

Agritourism instead favours small-scale production systems, integration with the environment – particularly with woods, forests and Mediterranean scrub, as well as proximity to the cities and their art and to ancient towns or medieval villages.

Every tourist farm is different and is the product of a history in which the place and its local traditions, the agricultural and livestock production, the buildings, the landscape and the climate, but especially the family that is usually also the owner, contribute to the hospitality on offer.

It may be said that every part of Italy has its own characteristic landscape, language, cuisine, type of agriculture, settlement pattern, seasonal holidays and celebrations, and all this is undoubtedly a function of the geography and history experienced by the resident populations.

TRADEMARK AND CLASSIFICATION

Nowadays the Italian model is the focus of interest for many countries in the world because of its ability to exploit local resources; however, it has always shown a fundamental weakness in the great diversity of forms and rules established by local law. Also the difficulty in clearly communicating the quality of available services was an important weakness.

There is a wide variety of available farm hospitality: you can sleep in rooms with bath or in apartments or small independent units, stay in an equipped camping area either in your own tent or in a camper, or even spend a night in a tree house. Many farms offer accommodations in houses that boast several hundred years of history, or have been rebuilt using building techniques now forgotten; in other cases, carefully chosen furnishings allow guests to relive the authentic atmosphere of the countryside. An effort to harmonize design and communication of the quality was therefore necessary. This project was launched in 2013 by the National Observatory of Agritourism, which has entrusted the technical working group inside ISMEA the implementation. In order to carry on the project, characteristics and trends in domestic and foreign demand were deeply analyzed. Ismea researches have resulted in a national scheme for classifying the quality of services, subsequently accepted by almost all local governments; it is based on a shared list of objective requirements (quality descriptors), completed by a system of easy to control scores, a selected list of important requirements, a graphics system to identify categories. Starting in 2013 Italy has used an institutional and national brand, "Agriturismo Italia", accompanied by a new system of classification.

The "Agriturismo Italia" trademark provides a certification for officially approved holiday farms operating according to national and regional standards. The trademark shows a sunflower enclosing a farm. The sunflower recalls a host of positive concepts: the sun, a pleasant flower, an award, the Italian summer, a holiday, the joy of its colors.

As in the case of hotels, the classification of farms is intended to give the public an overall idea of the level of comfort, the variety of services (liveliness of hospitality) and the quality of the natural environment (nature, landscape, tranquillity) that each farm is able to offer.

This system is meant to offer a harmonious representation of the spirit and 'personality' of Italian agritourism in its various forms while enhancing the agricultural aspect of the context of hospitality, and at the same time taking into consideration the environment and landscape where agritourism activities take place.

Thanks to the Agriturismo Italia trademark, both tourists and tourism professionals can easily distinguish officially accredited farms. This distinction is very important for the international market, especially for tourists who do not know what agritourism is and what it actually represents, and who risk confusing agritourism with other forms of hospitality that also operate in rural areas but do not fulfill the conditions specific to the territory and its character.

THE CONSUMER'S REASON WHY

Desk and field researches conducted by Ismea has highlighted that the demand of an urbanized society is particularly complex, also because it comes out from sometimes contradictory elements. For example, the consumer usually desires a strong emotional closeness to the nature, whilst in the rational sphere he/she calls for a high level of service and comfort, difficult to reconcile with the concept of natural.

The potential user often keeps in his/her heart deep roots in the past which have to coexist with new contexts and with modern concepts of life. In some cases, he/she believes to look for the nature, but does not realize that his/her purpose is a self-feeling of alternative and original behaviors.

Ismea researches also led to several hypotheses about market segmentation; an example is the model mainly based on the following two parameters.

- The preference of experiencing in a dynamic way instead of a restful and relaxing stay.
- The propensity to live on the farm doing the activities proposed by the farmer instead of considering the farm as a base for visiting the attractivenesses of the area.

Every group of consumer shows significantly different requests and expectations.

THE MAP OF FOREIGN TOURISTS

Even more complicated is the picture of the foreign tourists, composed of really peculiar cultures, behaviors and feelings.

Some areas of the world seek tangible elements (such as comfort, plenty of food, healthy products, etc.), while others have a propensity for intangible aspects: intense feelings, unforgettable emotions, unusual and genuine situations, history and culture of rural planet, green philosophy, the idea of preserving local areas.

In any case, the average level of accommodation offered by Italian farms is very high; they are equipped with every comfort, even if the guests who consciously choose this form of tourism prefer authenticity and consider other facilities, such as the availability of a TV, to be less important.

WG15 - Local arrangements for agricultural ecosystem services: connecting urban populations to their peri-urban landscapes through the ecosystem services of agriculture

Growing and sprawling cities, peri-urbanisation, as well as urban shrinkage, impact significantly on the landscapes fringing our cities and result in changing socio-economic demographics and changing relationships between traditional farmers and the incoming non-farming community. These fringe landscapes become increasingly fragmented by residential and industrial developments within what essentially becomes a transition zone with economic, social and cultural ties back to the city. At the same time, city dwellers become increasingly dependent on the ecosystem services of their peri-urban and rural hinterlands as sources of clean air and drinking water, and space for leisure and experiencing nature. The delivery of such services is threatened by urbanization, land abandonment, climate change and intensification of agriculture.

This working group is interested in the public/ common pool part of rural and peri-urban ecosystem services in the light of changing urban-rural relations. Topics such as food and fibres are dealt with in other working groups: we focus on services that are harder to buy and sell, such as biodiversity, landscape amenity, landscape functioning, natural pest reduction, pollination, soil protection, erosion control, water quality, water resources and cultural identity, and especially the role of agriculture in their supply.

Because of mechanisms of market failure for such ecosystem services from agriculture, arrangements have been developed for public or collective payments. Examples are the Agri-Environment Schemes (AES) that are part of the Common Agricultural Policy in Europe, and Payment for Ecosystem Services schemes (PES). These schemes are mostly financed from public funds and developed and managed at national or provincial levels. This working group welcomes contributions about national AES or PES, but favours presentations about local and regional initiatives that express urban-rural relations. Such local and regional initiatives may have developed their own AES or PES, or they may have developed arrangements with the aid of national schemes.

In addition, contributions are welcomed that describe alternative arrangements – other than payment – that ensure delivery of ecosystem services from agriculture. In general, we are looking for forms of landscape governance, collective action, collaborative landscape design and joint management, that result in effective delivery of agricultural ecosystem services in urban and peri-urban regions. We especially welcome examples from developing countries, such as peri-urban agroforestry initiatives.

During the working group sessions, we want to share results, thoughts and insights related to the following questions:

- *What are the relationships between ecosystem services from peri-urban agriculture with urbanization, food security and climate change?*
- *How is the delivery of public good and common pool types of peri-urban agricultural ecosystem services organized and financed?*
- *What is the meaning of ecosystem services from peri-urban agriculture in urban-rural relations, and how does this lead to innovative arrangements?*
- *How are ecosystem services linked to other farm diversification activities such as rural tourism and alternative food networks?*

Depending on the quality and innovativeness of the contributions, we may consider compiling a special issue or a book.

Convenors:
Judith Westerink, Alterra Wageningen UR, The Netherlands
Darryl Low Choy, Australia, Griffith University, Australia
John Tabuti, Makarere University, Uganda

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Managing Ecosystem Services in the Peri-urban Landscape: An Emergent Paradox

Darryl LOW CHOY[1]

Abstract **– Research of rapidly growing Australian metropolitan regions has highlighted the complex but critical nexus between regional landscapes, nearby metropolitan centres and their urban and peri-urban communities. It has shown that these regional landscapes are the custodians of a range of traditional community values such as biodiversity, outdoor recreation, rural production and natural resources, and emerging values such as ecosystem services. These peri-urban areas are undergoing significant changes in population demographics, largely through the influx of urban dwellers and the displacement of the former rural population. The incoming peri-urban residents, with limited capacity and knowledge for landscape management, are attracted to their new locations by the ecosystem services they provide but paradoxically, by virtue of their occupation, they are placing those same ecosystem services at risk. The paper explores holistic approaches for planning and managing these peri-urban areas that are capable of responding to the unique sets of challenges posed by these peri-urbanisation processes. The anthropocentric philosophical base of ecosystem services provides a conceptual alignment with the spirit and purpose of planning which seeks to improve the quality of life and liveability of communities. The paper discusses the rise of values-led planning approaches that embrace science informed planning within a 'joined-up' planning context, capable of addressing the protection of ecosystem services.**
Keywords **– landscape values; planning; new landscape managers.**

BACKGROUND

Australian metropolitan regions have experienced unprecedented rapid growth during the last three decades on the fringes of urban centres in the form of their outward expansion into the surrounding countryside (Bunker and Holloway, 2001). These peri-urban areas have experienced high levels of non metropolitan growth,part urbanization through closer subdivision, fragmentation and land use conversation of their former rural lands that has resulted in a blurred mixed zone of urban and rural activities exhibiting a characteristically high degree of heterogeneity, continual change and conflicting values(Low Choy et al, 2007). Local and state governments have attempted to manage this spontaneous growth through conventional urban planning and growth management strategies but with limited success.

The rapid influx of urban dwellers and the displacement of the former rural residents has resulted in management of peri-urban landscapes now being vested in residents with limited capacity and knowledge of landscape management. Peri-urban landscapes are the custodians of a range of traditional community values such as biodiversity, outdoor recreation, rural production and natural resources, as well as emerging values such as ecosystem servicesLow Choy, D, (2008). The incoming peri-urban residents are attracted to their new locations by the ecosystem services these locations provide but paradoxically, by virtue of their occupation and inexperience in landscape management, they are placing those same ecosystem services at risk.

THE NEW LANDSCAPE MANAGERS

A wave of new settlers has moved into these peri-urban areas and are now largely responsible for the management of these freehold peri-urban properties. Future management initiatives, especially in natural resource management (NRM), will have to engage this raft of new "actors" who can include: "tree change" life stylers, "homesteaders", religious communities, DIY homebuilders, the horse community, farm stays & retreats, the pet industry, boutique farmers, recreational providers, landscape suppliers, the equine industry, and land developers(Low Choy et al, 2007). Clearly, this range of new private landowners exhibit different aspirations and hold different values for their peri-urban properties. This raises the issue of how to acknowledge these values in future planning for rapidly changing peri-urban areas.

THREATS TO ECOSYSTEM SERVICES

The significant land use changes and wide spread landscape fragmentation has resulted in a range of NRM challenges of varying degrees of seriousness. They include: weeds infestation; increase in pest animals; loss of biodiversity; decline in water quality; changes to hydrological regime; loss of scenic amenity; and an increase in the prevalence of natural hazards. The inability of the new landscape managers to manage their properties has only exacerbated this unsatisfactory situation. These NRM challenges directly place at risk, the ecosystem services of these locations, including their functions, which were the positive attractors that drew the incoming peri-urban populations to these locations in the first place. This paradoxical situation urgently needs planning and management attention.

ADDRESSING THE EMERGENT PARADOX

As these NRM challenges are the direct outcome from the peri-urbanisation process, tackling them through an enhanced planning and management regime will by association, also address the negative issues associated with ecosystem services decline in peri-urban landscapes. To this end, the typical responsibilities for planning and managing the noted NRM challenges that are threatening ecosystem services in the peri-urban landscape have been identified and are set out in Table 1.

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Table 1: Typical Management responsibility for Peri-urban Threats to Ecosystem Services (Australian Context)
p: Partial responsibility

Management Responsibility / **NRM Challenge threatening Ecosystem Services**	Private land owner	NRM Body (NGO)	Local Government	State Government
Weeds infestation		p		
Increase in pest animals	?	p		
Loss of Biodiversity		p		
Water Quality decline				
Changes to hydrological regime				
Loss of scenic amenity				
Prevalence of natural hazards (namely bushfires and floods)				
Limited management capacity of peri-urban residents		p	p	

Noting that these management responsibilities would vary between jurisdictions, the table serves to highlight the ubiquitous situation of duplicating and overlapping responsibilities for most aspects of natural resource and landscape management.

It is proposed that the peri-urbanisation process be conceptualised as cycles that commence when various drivers of change operating at various scales, require certain land uses to facilitate or support their needs (Low Choy et al, 2007). This leads to land use changes in locations of least resistance which are typically the fringes of our urban centres. It is through this process of land use conversion that gives rise to the peri-urbanisation of former rural lands and to a modified landscape management regime. Without appropriate landscape management advice, guidance and regulation for the new landscape stewards, the continued degradation and destruction of these landscapes and their ecosystem services will continue to undesirable ends.

The peri-urbanisation cycle offers opportunities for planning and policy intervention to address elements of the process, from drivers through to landscape management challenges. The responsibility for this intervention varies according to legislative responsibilities, conventions and existing institutional and management arrangements. However, most of the management challenges associated with the peri-urbanisation process cannot be addressed by one level of government alone or through the individual efforts of the non-government sector or industry. Also much of these responsibilities are overlapping and duplicated between levels of government, the non-government sector, industry, the community-at-large and individual property owners. In terms of private land owners, the challenge is how to engage this largely "time poor" commuting community who are largely ignorant of their landscape management responsibilities and who lack the capacity and knowledge to undertake the necessary management tasks(Low Choy and Harding, 2010). Experience has shown that this can best be achieved through their dominant "urban" value sets. Initial engagement requires an early awareness campaign followed by capacity building initiatives tailored to the lifestyles of the new peri-urban residents. This should be a coordinated effort from state and local governments and supported by the relevant NRM Body.

CONCLUSIONS

Peri-urban areas worldwide are at the crossroads of significant change as cities continue to expand into their regional and rural landscapes. Unplanned and poorly managed approaches place at risk the positive ecosystem services values which incoming residents are attracted to. This emerging paradoxical situation can only be addresses through a concerted and coordinated planning and management process that is fully inclusive of private property owners. In this manner the multiple objectives of urban growth management, protection of good quality agricultural land and the protection of essential ecosystem services and other landscape values can best be rationalised and facilitated.

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Strategies for enhancement of ecosystem services of the periurban areas

Rovai Massimo, Fastelli Laura, Monacci Francesco[1]

***Abstract* – The paper presents the analytical path and results from a case study conducted within a laboratory of territorial analysis. A peri-urban area of the city of Lucca (Tuscany, Italy) was chosen for the analysis. The work was structured on the belief that sustainable territorial development can be supported by a rethinking of the interaction between urban and rural areas. Indeed, following the consolidation of the idea of the city as a specialised and functional space, the urban/rural relationship has gradually weakened causing the abandonment and deterioration of the few remaining agricultural areas within the city and its immediate suburbs. The new challenge is to combine urban and rural functions, in a balanced and synergistic. The goal is to pursue a strategy of improving the quality of living aimed at regenerating both morphologically and functionally the existing buildings, but also to rethink the open spaces in the suburbs. Finally, to provide increasing number of functions requested by citizens, proper planning of open spaces and peri-urban agricultural areas takes a fundamental role. Therefore, the public decisionmaker must do everything possible to allow citizens to regain awareness of the importance of the relationship with the countryside, local agriculture and food self.**

***Keywords* – urban-rural relationship, ecosystem services, periurban areas.**

ENHANCEMENT OF ECOSYSTEM SERVICES IN PERIURBAN AREAS

The unsustainability of planning models based on a hierarchical relationship between urban and rural areas has been emphasized in many studies (Gutman, 2007). In recent decades, analytical approaches aimed at finding a better balance between local demand and supply of resources and services (bioregional approach, territorialist, ecosystem, etc.) are emerging.

According to the approach of Ecosystem Services (ES) (Daily et al., 1997; De Groot et al., 2002; MEA, 2005), open spaces (rural and natural) are essential to ensure both the supply of critical resources as well as their reproducibility over time, in order to ensure long-term wellness of citizens. Therefore, in the periurban areas - where the open spaces are a scarce resource - these functions take on a higher value. This awareness is not sufficiently widespread among policy makers and among citizens. In fact, the current planning tools continue to promote the consumption of soil with the effect of a progressive reduction of the natural resilience and the ES supply of the soil. The search for a better balance between urban and rural areas and, more generally, between city and countryside (Magnaghi and Fanfani, 2010) is critical to ensure sustainable territorial development. In light of this, the constraint-based approach is no longer effective and it becomes necessary to adopt a proactive perspective of planning. In our case, the proactive approach took the form of project ideas about specific periurban contexts with the aim to stimulate and generate new insights on the relationship between urban and rural areas.

CASE STUDY

During the teaching laboratory of territorial analysis of the University of Pisa a methodology to develop planning ideas for regeneration of some peri-urban areas was tested. The suburban area of Lucca (Tuscany) was chosen as field of experimentation. This area, until a few decades ago was characterized by rural landscape and harmonious balance with the built spaces, nowadays has the typical features of an urban sprawl. A dynamic development that led to the creation of anonymous places with a loss of the functional values of the agricultural spaces, increasingly subjected to the growing phenomena fragmentation and abandonment.

The case study analysis was conducted in eight peri-urban areas, providing an initial diagnosis phase and a second phase of formulation of guidelines and project proposals (paths of exploitation and regeneration) to be submitted to the public decision maker. In the first phase of work three insight studies were conducted: i) an opinion survey to measure the social perception on the quality of the peri-urban areas and the demand of ecosystem services; ii) a study of the indications arising from the planning instruments on territorial framework; iii) a diachronic analysis with GIS software of land uses detectable in three different time thresholds (1954, 1978, 2010). In this paper we report some results of opinion survey conducted among 316 citizens on various issues such as use of public green urban and evaluation of the level of its quality; perception of abandonment of peri-urban open spaces; quality of public services; potential role of urban agriculture; strengthening of the local food supply; and interest in participatory processes. In our opinion, from the obtained answers emerge some aspects that clearly, show an explicit request of citizens to boost the supply of some ES. Among the aspects of greatest interest the aesthetic quality of the public urban green has been identified as crucial with the 74% of respondents reporting being concern with the increasing degradation and / or abandonment of agricultural land for building transformations. Concerning the quality of public urban green (Fig. 1) 40% of the citizens believe that it is inadequate while 49% believe that the quality is sufficient and only for the 6% of respondents the quality is more than enough. A good predisposition to the development of projects to encourage the recovery of agriculture for local consumption, for example through circuits of short food supply chain, farmers markets, etc., also emerged from the survey.

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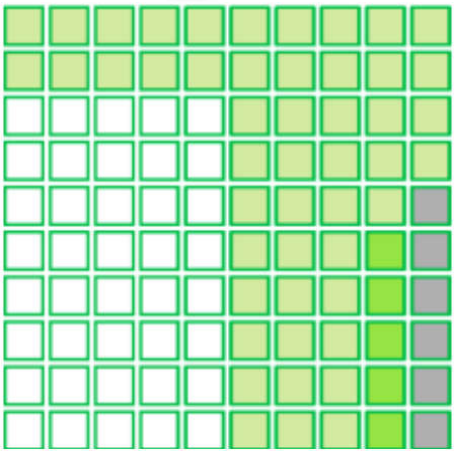

Fig. 1. Graphical representation of the results on the quality of public green. A) white 40%: inadequate level; B) yellow 49%: sufficient level; C) green 6%: level more than enough; D) grey 5%: other perception.

IDEAS, VISIONS AND PLANNING FOR PERI-URBAN

Project proposals for the sample areas have been defined in the second phase of the work. The urban acupuncture concept (Casagrande, 2012) was adopted in order to encourage the involvement and awarenessraising in the local community on the aesthetic and functional quality of the peri-urban areas. The proposed project strategies have been drawn starting by direct observation of identitarian and emblematic places for socializing, as has been revealed through interviews. With reference to the role of urban agriculture in providing ES, we have suggested activities for the achievement of the economic sustainability of this form of agriculture. In the contemporary declination of urban agriculture there is a need to identify areas for the food production (both hobby and professional), areas for farmers' markets but also buildings for agri-kindergartens, educational farms, shelters for animals used in teaching activities, and educational trails.

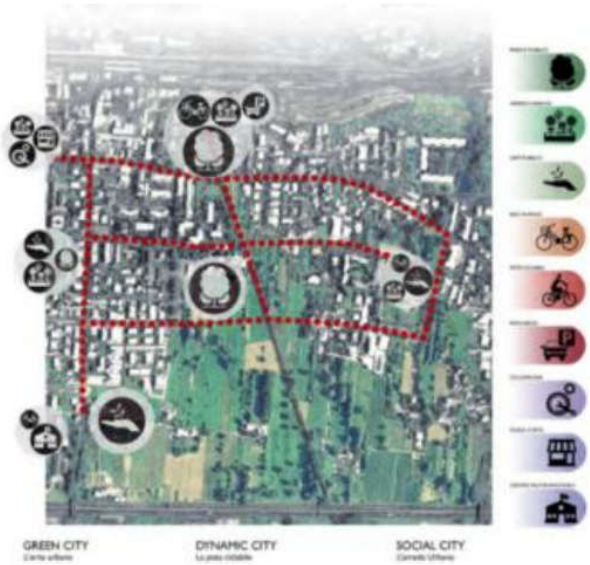

Fig. 2. Sample area "Acquedotto Nottolini" design concept proposed by students Fazio, Moschini, Tamberi, Terranova

These activities have been located in areas ideal for their proximity to the urban population and for accessibility to rural activities carried out near of the city center. Through an architectural and compositional language suitable to promote dialogue between the two dimensions of urban and rural, the actions proposed have been designed. The design of these spaces aims to ensure inclusion and social integration between different ethnic groups and nationalities (eg. community gardens, social farming to ensure the inclusion of vulnerable groups, treating specific pathologies through animals therapies). Therefore, there is a need for a participatory approach that includes cooperation between different actors in order to develop interesting synergies between available skills and roles.

POSSIBLE STRATEGIC GUIDELINE

The gradual disintegration of the functional relationships of the city with the countryside is one of the typical aspects of the contemporary urban sprawl. A disintegration that occurs with increasing fragmentation of the residual open spaces and with landscapes and environment high quality trapped inside the urban fabric. In order to provide effective solutions to stem this process, a greater openness of the decision makers to the citizens' requests is essential. A participatory approach to involve - from the earliest stages of design – the potential users and potential suppliers of services (eg. farmers) is critical to promote a real and shared strengthening of the relationship between urban and nearby rural areas. In addition, the needs expressed by civil society and the potential expressed by the territory in its various components can be met more effectively if the participatory approach is supported by guidelines and proposals as well as developed in this case study. All this should be done in order to provide new operational momentum to enhance the planning tools in force, which will increase the credibility of these tools among citizens.

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Agroecological agriculture and water quality: Sustainable Guarapiranga Project

Nilson Antonio Modesto Arraes[1]

***Abstract* – This paper analyze the results achieved by the Sustainable Guarapiranga Project, developed in southern of São Paulo municipality in relation to farmers involvement and creating alternative marketing channels. After three years, The Red Crane Seal was given to 23 farmers, representing 8% of the total farmers. The governments created three Clean Agriculture and Organic Products farmer´s market, which brings together producers who joined the Red Crane Seal (do not use pesticides) and certified organic producers. As the results were shy, wonders whether ineffective projects can generate the desired impact.**
***Keywords* – agri-environment schemes, urban and peri-urban regions, ecosystem services.**

INTRODUCTION

The Metropolitan Region of São Paulo (MRSP) is the largest and most populous urban area in Brazil and one of the five largest in the world. It covers 39 municipalities, concentrating almost 20 million inhabitants. The MRSP is located in the headwaters of the Tietê river, a low water availability region, which requires import 32.3 m³ / s of adjacent watersheds.

Among the springs that supply the MRSP, the Guarapiranga is the second most important, supplying the southwest region with 4 million people. The watershed covers partially the municipalities of Cotia, Embu, Juquitiba, São Lourenço da Serra and São Paulo, and entire municipalities of Embu Guaçu and Itapecerica da Serra, having 64.000 ha (42% rural uses, 37% remaining Atlantic Forest, 17% urban uses and 4% water uses). Urban sprawl on the Guarapiranga watershed has a strong effect on the availability and water quality (Whately e Cunha, 2006)

Several government initiatives (state and municipal) and / or NGOs have sought both to preserve the rural use, understood as a buffer zone between urban use and the Atlantic Forest, as promote the adoption of more sustainable agricultural production systems, to preserve the quality of the source water. From 2006 to 2012, the Special Fund for the Environment and Sustainable Development (FEMA) in São Paulo, through three calls (04/2007, 06/2008 and 08/2009), financed 20 projects (US$ 1 million) in order to promote sustainable practices, focusing primarily on the Southern region of São Paulo (Valdiones, 2013).

With this same purpose, in late 2010, the of Environment and Agriculture Departments of the São Paulo State, through the Sustainable Guarapiranga project, and Subprefectures Coordination and the Green and the Environment Departments of São Paulo Municipality, through the Agriculture Clean program, created a cooperation protocol with São Paulo farmers. To sign the protocol, the farmer undertakes to adopt a set of good agri-environmental practices and governments undertake to provide technical assistance and to support the creation of alternative marketing channels (farmer´s market and institutional purchases).

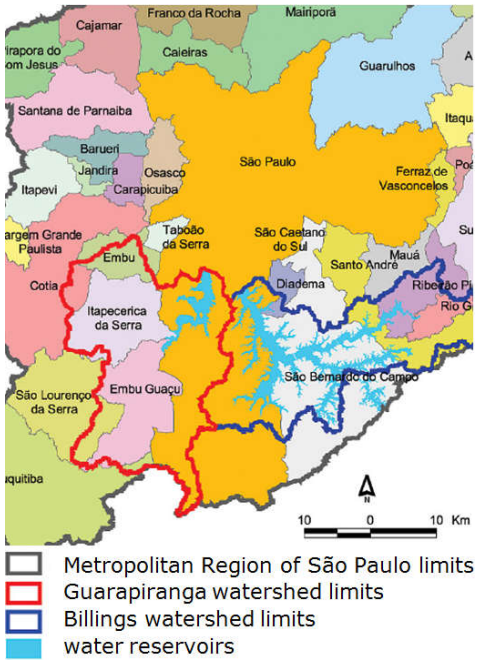

Figure 1. The Guarapiranga watershed in MRSP.

The protocol, on the one hand, establishes a form of land use which potentially allow farmers to provide the ecosystem services (MA, 2005) water regulation. On the other hand, the government offered compensation mechanism is mainly supporting the creation of markets for agroeco-logical products.

Having Sustainable Guarapiranga Project as an object of study, restricting its application to the southern region of São Paulo through the Clean Agriculture Program, between 2011 and 2013, the objective of this paper is to analyze the results achieved by the project in relation to accession farmers and creating alternative marketing channels.

METHODS

The information sources consist of public documents on Sustainable Guarapiranga Project (minutes of the meetings of the Executive Committee of Good Practices Agri-Environmental Protocol), the Agro-ecological Informational Network of Guarapiranga, and interviews with public officials involved in the projects, as well as professionals from institutions (Instituto Kairós e Fundação Mokiti Okada) that acted in partnerships.

RESULTS AND DISCUSSION

The Register of Rural Producers contains 312 farms in the southern region of São Paulo, covering 4,642 ha.

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Badaue (2007), analyzing the Register in 2006, found that 92% of farmers adopt conventional systems with the use of pesticides. Valdiones (2013), analyzing the Register in 2012, found that 50% have an irrigation system. Despite the area with vegetable crops being the most significant, with 1,300 ha (60% of the productive area), the local and regional market for flowers and ornamental plants has proved attractive, stimulating the conversion of some producers.

After joining the protocol, farmers had a period of 90 days to submit one Conversion Plan for the Agro-Ecological System in response to a checklist applied in their establishment. The Plan should include annual targets for a period of four years, for the adjustment of production practices. The responsibility for ensuring the operability of technical assistance activities, define criteria for the issuance and renewal of Certificate to the Protocol, granting the Guarapiranga Origin Indication Seal (Heron Red) establish methodology for evaluation and monitoring of the goals and propose adjustments and adjustments to the Protocol fell to an Executive Committee, consisting of three technicians from the two State Secretaries and Supply General Supervision, linked to the Department of Subprefectures Coordination.

The checklist of productive practices adopted by farmers establishes a score that classified into six classes, with decreasing adopting agroecological practices, from I to V, plus the class "pesticide uses." The use of pesticides does not allow the seal granting and exploitation of established marketing channels.

The first meeting of the Executive Committee to assess the plans took place in May 2011. Table 1 shows the number of farmers who have had their conversion plans approved and subsequently renewed. Despite the initial membership of 20 farmers in the first year, renewals and new memberships are low in the next two years. The Red Crane Seal was given to 23 farmers, representing 8% of the region.

The Subprefectures Coordination Department created three Clean Agriculture and Organic Products farmer´s market, which brings together pro-ducers who joined the Red Crane Seal (do not use pesticides) and certified organic producers. One specifically for producers of the South region of the city, was established in January 2010. This farmer´s market has 40 producers supplying fruit and vegetables. The other, in the central area of the city, has 150 producers from different regions of the city, offering a wide variety of fruits, vegetables, poultry, dairy, grains and plant seedlings.

Table 1. Approved and renewed Conversion Plans

Approved Plans	2011	2012	2013
i	2	1	
ii	2	1	
iii	5	2	
iv	8		1
v	2		1
pesticide use	1		1
Red Crane Seal	18	3	2
Renewed Plans	2011	2012	2013
i			1
ii			
iii			1
iv			2
v			4
pesticide use			2
Red Crane Seal			7

Even competing with the organic sector of large supermarket chains, farmer´s market attracted the media attention and won customers, consolidating itself as a good marketing channel.

Despite the creation of marketing channel, the involvement of farmers to the protocol was low. In interviews of public officials, they pointed out that the difficulties of farmers to the Protocol are related to land tenure, access to credit and compliance with environmental rules by production units.

CONCLUSION

In mid-2013, FEMA launched a new call for projects supporting the development of sustainable agriculture bases in the southern region of the city. Keep ineffective projects to effective impacts?

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Method for assessing environmental services in agricultural metropolitan areas and their degree of protection. The examples of Gallecs Protected Natural area (PNA), el Baix Llobregat Agrarian Park and la Granada-Sant Pere de Riudebitlles

Manel Cunill i Llenas[1]

***Abstract* – This paper has developed a methodology for assessing environmental food provision services applied in three regional areas of the Metropolitan Area of Barcelona: Gallecs Protected Natural Area (PNA), El Baix Llobregat Agrarian Park and La Granada-Sant Pere de Riudebitlles. The results of this evaluation were compared to the four categories of protection established by the Open Spaces System in the Barcelona Metropolitan Territorial Plan (PTMB).**
***Keywords* – environmental services, agricultural area, territorial planning.**

INTRODUCTION AND AIMS

Nowadays, there is a need to assess agricultural metropolitan areas, which form an important part of the system of natural areas in the territorial matrix. Two premises can be used to carry out this assessment: on the one hand, the intrinsic value of these areas, and on the other, the goods and services they provide and which guarantee people's wellbeing. The two paths are not mutually exclusive in determining social, legal and economic recognition for these areas, however. In fact, they are interrelated and depend on one another.

The overall aim of this study is to evaluate environmental services in agricultural ecosystems using the criteria included in the Millennium Ecosystem Assessment (MEA, 2005). Based on the scientific literature derived from this international project and georeferenced information from SIGPAC (Geographic Information System for Agricultural Land) (Government of Catalonia, 2012), we have developed a methodology to assess environmental services in agricultural metropolitan areas.

The specific aims of this paper are as follows:

1. To use georeferenced SIGPAC information to develop a methodology for assessing environmental food provision services and services supporting biodiversity in agricultural metropolitan areas.
2. To compare the results obtained from the above methodology with the demarcated areas defined by the Open Spaces System in the Barcelona Metropolitan Territorial Plan (Government of Catalonia, 2010).

METHODOLOGY

We conducted our assessment of the environmental services on agricultural land in three areas of the PTMB, specifically, the municipal districts covering l'Espai d'Interès Natural de Gallecs, El Baix Llobregat Agrarian Park, and La Granada-Sant Pere de Riudebitlles. These were chosen due to our interest in assessing the most representative agricultural areas with regard to the types of crops grown in the Metropolitan Region of Barcelona (RMB) and the fact that they are awarded social and legal recognition for their agro-environmental values.

Environmental Food Provision Services (EFPS) were calculated using yield data for the main crops in the RMB and the production levels of SIGPAC enclosures were assessed according to their potential for agricultural production (CUNILL, 2012)

Environmental Biodiversity Support Services (EBSS) were assessed on the basis of those enclosures which provide most biodiversity in the territory's entire agro-environmental matrix, identifying those areas registered with the Government of Catalonia's public registers: either the Catalan Council of Organic Production (CCPA) or the Catalan Council of Integrated Production (CCPI).

The EBSS results were used to weight the results obtained for the EFPS. The purpose of this weighting is to incorporate the environmental factor into the final WEFPS results (Weighted Environmental Food Provision Services).

The WEFPS results were compared to the demarcated areas defined by the Open Spaces System in the PTMB, which establishes four categories: Legally Protected Areas, Specially Protected Areas, Preventive Protection Areas and Specially Protected Areas of Vines.

All of the alphanumeric databases were analysed using a GIS system, specifically the ArcGIS 10 software produced by the company ESRI. These data were used to generate different thematic maps for the three areas.

RESULTS

Below we present the most important results of the analysis of 78,245 SIGPAC enclosures, grouped into the three areas of study: Gallecs Protected Natural Area, El Baix Llobregat Agrarian Park and La Granada-Sant Pere de Riudebitlles.

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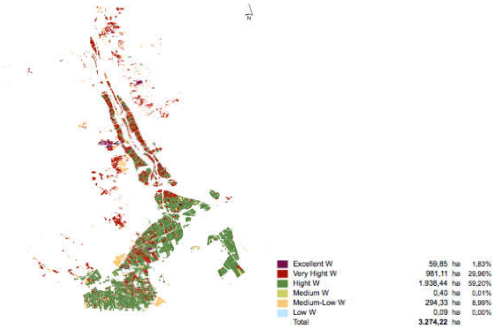

Map 1. El Baix Llobregat Agrarian Park. Environmental Food Provision Services based on SIGPAC uses (weighted accord-ing to the CCPAE and CCPI databases)

Map 1 shows the Weighted Environmental Food Provision Services (WEFPS) results for the area of study El Baix Llobregat Agrarian Park. Of the three areas of study, this has the most WEFPS.

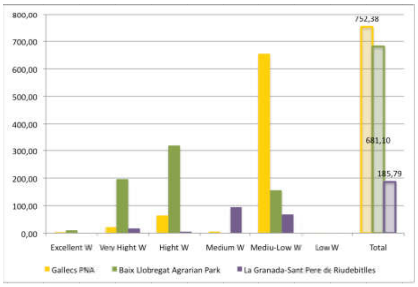

Figure 1. Surface area (ha) of agricultural areas located outside the boundaries of the Open Spaces System in the PTMB and areas of study

Figure 1 shows the number of hectares of WEFPS in the agricultural areas located outside the Open Spaces System in the PTMB for each category of importance and area of study. The absolute data in terms of hectares are similar for Gallecs Protected Natural Area and El Baix Llobregat Agrarian Park, 752.38 and 681.10, respectively, while La Granada-Sant Pere de Riudebitlles is smaller, with 185.79 ha.

In the case of Baix Llobregat Agrarian Park, most of the agricultural areas with WEFPS outside the Open Spaces System are concentrated in the categories of Very High S and High S. For Gallecs Protected Natural Area most WEFPS areas are concentrated in the Medium-Low S category, with fewer in the High S and Very High S categories.

CONCLUSIONS

The results of this study show that the agricultural areas in El Baix Llobregat Agrarian Park are those which provide most environmental food provision services according to the defined degree of importance.

For all three areas of study, Barcelona Metropolitan Territorial Plan (PTMB) leaves 1,619.27 ha outside the Open Spaces System, this particularly affecting Gallecs Protected Natural Area (PNA) and El Baix Llobregat Agrarian Park.

In the case of Gallecs Protected Natural Area, the difference in size between the Legally Protected and Specially Protected Areas is substantial. This means that much of the surface area of agricultural land with WEFPS has a minimum level of protection. This situation also occurs in La Granada-Sant Pere de Riudebitlles, with the difference that here there is a demarcated area specifically for Specially Protected Areas of Vines.

The methodology used may be useful in the field of land use planning. To this end, the SIGPAC database was used in the study, a system which is updated annually with regard to agricultural area uses and boundaries. A more detailed analysis of agricultural areas in any territory would require more information than is presently available in the SIGPAC database, such as soil analysis, among others.ould like to thank the Joint Organic Congress for providing this template and most of the detailed instructions included in it.

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Collaborative governance of a peri-urban enclave: how a farm became nature and citizen oriented

J. (Judith) Westerink[1]

***Abstract* – This paper is about peri-urban farmers who turned the threat of the city into an opportunity, by collaborating with a wide range of stakeholders, and by developing a strategy aimed at delivering ecosystem services. This way, they made their farm too important to be converted into a residential area or urban park. Although citizen involvement with the farm has grown, involvement of governmental actors has dwindled as soon as collaborative action was achieved. This paper makes a plea for learning in addition to action.**
***Keywords* – collaborative governance, peri-urban farming, ecosystem services, farming for nature**

INTRODUCTION

Farms in peri-urban areas usually cannot ignore the influence of the city, which may include high land prices, urbanisation pressure, and recreational activities. One of the main resources of farmers in peri-urban areas is their land, which holds the potential for the delivery of a range of ecosystem services to the nearby city dwellers. Turning these ecosystem services into a business model is not easy, because of the pubic goods characteristics of most of them. For that reason, mechanisms for payment need to be developed through collaborative governance.

Collaborative governance can be understood as the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/ or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished (Emerson et al., 2012). Emerson et al. developed a framework for analysing processes of collaborative governance. Within a collaborative governance regime (CGR), they distinguish dynamics and actions (outputs). These actions may impact the context which the collaborative governance tries to influence, but also the collaborative governance regime itself, leading to adaptation. Collaboration evolves as a result of one or more drivers, such as initiating leadership. The core of collaborative governance, in their view, is the interplay of principled engagement, shared motivation, and capacity for joint action, which together determine the quality and extent of the collaboration dynamics leading to action.

I follow this framework developed by Emerson et al. (2012) in the analysis of a case study of collaborative governance of a peri-urban enclave aimed at enhancing ecosystem services. As action researcher, I have been deeply involved in the case. Not only did I supervise the trans-disciplinary program for monitoring and evaluation (Opdam et al., 2015), I was also involved in the collaborative governance process (Buizer et al., forthcoming). As a result, I can build on a rich archive of data, including results of monitoring, minutes of meetings, emails, and my own observations.

CASE STUDY: FARMING FOR NATURE IN BIESLAND

Context

The Biesland Polder, a remnant of the open moist grassland landscape once common in large parts of the Western Netherlands, by now is surrounded by residential areas, urban parks and greenhouse areas belonging to the cities and towns of The Hague, Delft, Pijnacker and Delfgauw. Only one full-time dairy farmer has remained. Around 2000, local and regional governments developed plans for housing and extending the urban parks in Biesland.

Drivers

Together with a nature volunteer, the farmer was already developing ideas about making the farm more relevant to the city by enhancing its natural values, when he heard about Farming for Nature (Buizer, 2008, pp. 63-112). Farming for Nature (FfN) by then was no more than a vision for inte-grating farming and nature, developed by researchers. The researchers were looking for farms to try out their ideas. When the Biesland farmer approached them, they arranged research funding for initiating a collaborative effort. This way, the researchers were given the (financial) possibility to show leadership in addition to the formal leading role of the Province and the informal leadership of the farmer.

Collaboration dynamics

The researchers organised a range of meetings with the farmers, officials of local and regional governments, nature volunteers and members of a new citizen group. Principled engagement resulted from the positive effects expected from FfN on landscape amenity, biodiversity and water quality (ecosystem services). Even though their stakes in ecosystem services did not always overlap, the various stakeholders acknowledged that they needed to collaborate to implement FfN. During the phases preceding action (2002-2008), collaboration was intense and took place at various levels, sites and moments (Westerink et al., 2013). Shared motivation grew in this process, especially through joint struggles and joint accomplishments, for instance in the cumbersome EU state aid notification process and in establishing financial commitment of the participating governments (Buizer et al., forthcoming). As a result of this principled engagement and shared motivation, the collaborating actors chose to develop tailor-made governance arrangements. To pay the farmers for the ecosystem services delivered, a local payment scheme was set up, that differs substantially from the national

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agri-environmental scheme (Westerink et al., 2014). This scheme, combined with the lessons learnt in the monitoring and evaluation, and the leadership shown, embodied the capacity for joint action.

Collaborative actions

Based on a plan developed together with their collaboration partners, and supported by the payment scheme, the farmers transformed their farm, both in the sense of landscape layout and farm management practices. The transformed landscape and the new farming practices are aimed at delivering a wide range of ecosystem services: more biodiversity in the fields as well as the landscape elements, a better water quality in the ditches, more room for storm water storage, and a more attractive landscape for recreation. To ensure extensification, no manure is imported to the farm, and purchase of feed is allowed only in exchange for export of manure. In addition, water levels were raised in spring, and shallow shores were laid out along many of the ditches.

Impacts and adaptation

Involvement of citizens with the farm has increased greatly since the farmer started with FfN. The plans for housing were abolished and no grassland was transformed into park. The farm had made itself very important to the city.

However, the CGR changed as soon as the joint action was taken. The emphasis moved from deliberation to learning, but there was less government involvement in the monitoring and evaluation network than in the deliberations aimed at joint action. As a result of the experiences of putting FfN into practice, one major adaptation was done to the scheme and the farming system, related to the no-input rule. Around that adaptation, there was a little peak in government involvement, which soon subsided again. Research funding stopped after five years, putting an end to the input of the researchers in collaboration as well as monitoring and evalua-tion. Most of the action is now with the farmers, still farming according to FfN, supported by the local payment scheme. In addition, they have developed new collaborations, in order to remain relevant to the city.

DISCUSSION

Emerson et al. (2012) make ten propositions about the functioning of collaborative governance regimes, of which I highlight two:

- Collaborative actions are more likely to be implemented if a shared theory of action is identified explicitly among the collaboration partners and the collaborative dynamics function to generate the needed capacity for joint action (pr. 8).
- CGRs will be more sustainable over time when they adapt to the nature and level of impacts resulting from their joint actions (pr. 10).

In the case of FfN in Biesland, the collaborative dynamics have clearly generated the needed capacity for joint action. The ideas of FfN formed a shared theory of action that supported the collaborating partners in moving from individual problems to joint solutions. In other words, FfN supplied a common language or 'boundary concept' that fostered collaborative governance (Opdam et al., 2015).

The sustainability of the CGR, however, may be a matter of concern. Without frequent meetings and deliberations, engagement and shared motivation may dwindle. Without learning process, the need for new adaptations may go unnoticed. Focussing on action only thus may diminish the capacity to adapt. Partners should therefore not be satisfied with achieving collaborative actions, but are recommended to actively take part in learning from the impact of those actions.

The farmers, however, understood that they needed to collaborate and adapt in order to sustain their farm. They did so when they adopted FfN and they continued to do so.

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Towards an agroecological transition in peri-urban agrarian systems in Madrid (Spain)

Marina García-Llorente, Carmen Haro, José Luis Cruz, Alejandro Benito[1]

Abstract – This study describes a participatory action research used to reconnect urban and rural environments through collaborative agricultural practices and its related ecosystem services. The project is conducted in a periurban municipality of Madrid (Spain).
Keywords – ecosystem service, collective farming, urban-rural relation.

INTRODUCTION

Rural areas cover 90% of the territory in Europe and its ecosystems are the source of most essential ecosystem services (ESs) demanded by both urban and rural populations. However, the human transformation of land cover during the last five decades has promoted farming intensification in the more productive areas and the loss and abandon of rural areas. The conversion of multi-functional landscapes into more simple, productive, and mono-functional ones, threatens the agroecosystems preservation and many intangible ESs, but also the social and economic viability of rural populations (lack of employment opportunities, ageing population, loss of local knowledge). This is a key challenge affecting Madrid, one of the largest cities of Spain with an important metropolitan area and an evident urban and rural gap. Under this context, a transition from industrialized towards an agroecological model is starting to be consider as an innovative strategy (Guzman et al., 2013). In this project we are combining research and action, trying to promote and support the agroecological transition of Madrid through the creation of a permanent agrarian network based on collaborative work with local communities and urban dwellers (reconnecting urban and rural environments). To do so, we are running a pilot experience in Perales de Tajuña, a municipality at 38 km to Madrid, with one of the best agrarian periurban areas of Madrid.

The main goal of this research is to reconnect urban and rural environments through collaborative agricultural practices and its related ESs. Specifically, our aims are to: (I) describe the research action approach used in this process, (II) analyse which are the most socially important ESs provided by agriculture in the empirical case, and (III) explore how far collaborative farming might strength urban-rural relations. The collective character of this initiative could help to elicit the shared and social values of agroecosystems (Kenter et al., 2015), to reconnect human wellbeing with nature, and to valueESs beyond markets.

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METHODS

We are using a participatory action research ap-proach based on a series of steps. Here we describe the key events conducted and the outputs obtained in each of them (objective I).

In order to answer to objective II, a deliberative workshop was conducted in July 2015; where 20 participants living in the study area and from Madrid city were involved. During the workshop, participants completed individual questionnaires on ESs preference with a list of ESs, where they chose the contribution of each service to social wellbeing. The idea of this first exercise was to give participants time to thought individually on the topic. Then, they were split into five groups to choose by consensus the top five ESs delivered by agriculture. After that, they discussed about the selected ESs and the reasons of its relevance. Giving answer to objective III, a specific open question was asked focused on the project capacity to enhance rural-urban relations and in which way.

RESULTS

Project brief description

In a previous research we identified the relevant agroecological potential of the study area. Since February 2015, we have run several participatory workshops to reflect and shape the project collectively. The main idea was related on how to promote agriculture on the municipality as a source to revitalize local development, taking into account its environmental, economic and social sustainability. During this process 50 people have expressed their interests and needs.

The first results shed light on: the wide range of stakeholders interested on agriculture. With this information, we conducted a stakeholder mapping (see Fig. 1). Then, an agrarian plot of 3000 m2 was rent by local authorities for a training purpose in phases: from training and education on small orchards (50m2) to future early experiences in marketing agricultural products (forthcoming stage) (following Llobera& Redondo 2014).Later, several action priority lines were detected by participants in relation with: designing a training program, designing the main land uses in the plot, preserving traditional varieties, maintaining the essential ESs behind agricultural activities (ie. hydrological regulation, freshwater availability, soil conservation and habitat for species), etc. With this information in mind, working groups have been created (Fig. 1).

Socio-cultural assessment of ESs provided by agriculture

During the deliberative workshop, 15 services were selected by at least one group, showing the variety of ESs attached to agriculture. They were: two provisioning services (quality food products and genetic resources of local varieties), four regulating

(soil fertility, air quality, water retention, and habitat for species), and nine cultural services (exchange of information and knowledge, being part of a community, preserving cultural agrarian landscapes, envi-ronmental awareness, entertainment, self-esteem, physical exercise, local identity attached to agriculture, and satisfaction for preserving other living things). From those, quality food products and knowledge exchange were highlight by all (5/5) or almost all groups (4/5).

Collaborative agriculture to strength urban-rural link

All participants highlighted the project capacity to build bridges between urban and rural areas. Arguments have been grouped in four main discourses:

1. Collective project vocation: decisions and farming task are taken and performed collectively. The opportunity to rediscover collective wellbeing going beyond individualism was mentioned.
2. Engagement of rural and urban participants: participants highlighted the impact of including people living in both environments that promote the integration of different sources of knowledge and skills, comprising innovation with traditions.
3. Strengthening inhabitants bonds with nature: this discourse was related with the increase of connectedness to nature, the improvement of environmental awareness and the respect to the rhythms of nature due to the time spend in nature.
4. Urban dwellers as consumers of local farming products: it was related with the possibility to create producers-consumers networks, establishing relationships with urban dwellers interested on purchasing locally produced food.

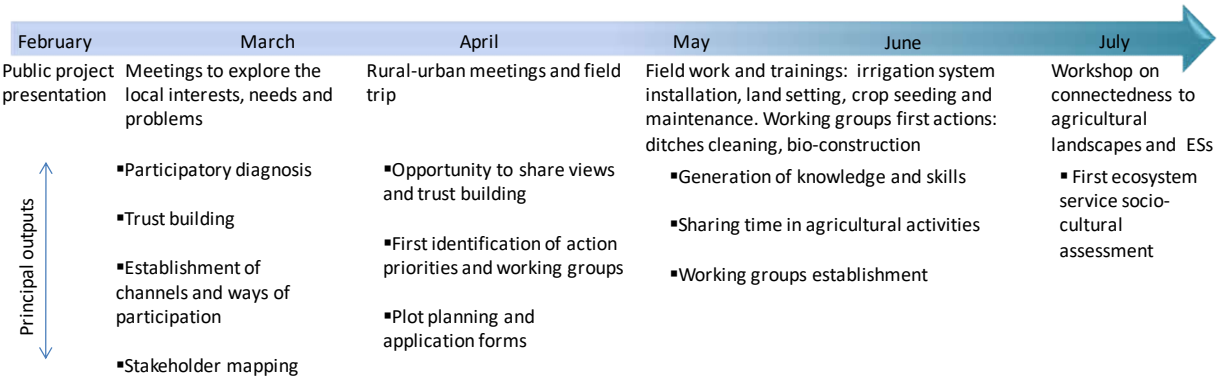

Figure 1. Key milestones taken place during the participatory action research study

DISCUSSION AND CONCLUSIONS

We have found the use of collective approaches and deliberative techniques as suitable tools to create spaces for social learning and knowledge co-production around innovative way for sustainable agriculture; as suggested by recent publications (Kenter et al., 2015).Following our findings, collective farming provides a large and diverse flow of ESs, being cultural ESs the most valued, which is congruent with the tendency of previous studies in home-gardens (Calvet et al., 2012). It is also remarkable the large number of cultural ESs mentioned which were particularly attached to physical and emotional health and other most invisible human wellbeing components, as the establishment of farming networks. As Plieninger et al. (2015) highlighted cultural ESs could help to engage different actors with agricultural landscape management.

In spite of the mainstream of the ES concept, it has remained almost absent in agricultural sciences (Tancoigne et al., 2014). The ES approach could help to understand agroecosystems in terms of its tangible and intangible contribution to human well-being. We hope to contribute to the design of a new model (applicable to other areas) in which collective learning and community management feed agricultural practices to reconnect urban and rural areas, unravelling the multiple ESs provided by farming practices.

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Critical success factors for delivering farmer-managed public goods in Dutch rural areas

Hein Korevaar, Greet Blom-Zandstra[1]

***Abstract* – The development of cooperation was studied in three Dutch regions in which rural development started in the 1990s and where land use significantly changed from a dominance of agricultural production towards an integration of primary production with other functions. Herein, we analysed the critical success factors for the production and maintenance of farmer-managed public goods, for cooperation through regional collectives and how these factors manifest themselves. We concluded that implementing and governing public goods were successful when done by farmers in close cooperation with local governing bodies and other actors. Four key factors appeared to be most important: 1) establishing a system of rewards as new element in building a good 'market structure'; 2) a mix of governance forms and an alternation between these forms; 3) visionary leadership with networks in both public and private sector; 4) time for new ideas to ripen and for commitment among actors to grow.**

***Keywords* – local cooperation, developing rural areas, farmer-managed public goods, critical success factors, multifunctional land use.**

INTRODUCTION

Europe's countryside is subject to competing claims on available land by agriculture, housing, infrastructure, nature and recreation. New concepts and local initiatives for the development of a sustainable countryside and agriculture are urgently needed (OECD, 2012). A new route is multifunctional land use, in which primary production is integrated with non-agricultural practices, offering services to the general public from which farmers and other regional stakeholders can make money or can apply for subsidies (Huylenbroeck and Durand, 2003). Within this new paradigm, they are encouraged to collaborate in producing so-called farmer-managed public goods and to find ways to share costs and benefits, power and responsibilities.

Farmer-managed public goods have to be profitable for farmers and closely connected to the interests of other actors in the area and require collective action (OECD, 2012). In practice, such a match in objectives is difficult to realise. One of the barriers to the development of public goods is a authority gap integrated rural development is often confronted with (Hajer and Wagenaar, 2003). There are international competitive markets and super-national (e.g. EU) legislation, while national governments tend to withdraw from their central authorities.

We studied the factors that influence successful rural development, especially looking at factors enhancing the effectiveness of governing public goods (Blom-Zandstra et al., 2015) and regional cooperation between farmers and otheractors (Blom et al., 2015).

METHODOLOGY

We studied the development of regional cooperation in three different Dutch regions (Winterswijk, Het Groene Woud and Waterland) in which integrated rural development started in the 1990s and where land use significantly changed from a dominance of agricultural production towards an integration of primary production with other functions.

In **Winterswijk** agriculture (mainly dairy farming), nature and recreation are mixed. It isrelative sparsely populated compared to the Dutch average. Tourism and recreation are important for local economy, offering directly and indirectly about 25% of all regional jobs (van Zanten et al., 2014). In **Het Groene Woud** the core of the area consists of nature reserves, surrounded by a circle of farmland, partly surrounded by a triangle of three big cities. Agriculture has a strong economic base due to intensive cultures (e.g. tree nurseries). **Waterland** is an open area dominated by wet grasslands, with a high valuable landscape and high ecological and recreational values.

Initiatives for launching farmer collectives and cooperation between farmers and other actors in thethree regions aimed at support and improvement ofnature and landscape conservation, on-farm sales, agro tourism, social care, education and to increase the prospects of the region in a broader sense.

We collected data from different sources such as literature, workshops and interviews in each region. We investigated which factors were considered to be stimulating or inhibiting and analysed the critical success factors for the production and maintenance of public goods and for cooperation through regional collectives and how these factors manifest themselves in the three regions.

RESULTS AND DISCUSSION

The transition towards multifunctional land-use in the three case study regions show a clear, constant shift from hierarchical governance (governmental actors has the lead) via open co-governance (the actors are a mixed group, the power is diffused and cooperation forms are flexible) towards self-governance (mainly non-governmental actors with non-governmental power) and vice versa(Arnouts, 2010). As our interviewees emphasized, that this dynamic behaviour appeared to be crucial to the emergence of commitment to the governance of public goods and to atransition towards more collectivity. Collective action was shown to be very important in this context as concluded from an extended OECD-study in which 25 cases in Europe, Canada, Japan and New Zealand were analysed (OECD, 2012). This studyshowed that farmers usually form the core group of the actors involved in rural development. Farmers adopt new activities and proceed agri-environmental public goods.

Bottom-up initiatives for local cooperation and new activities in rural areas fit in recent policies of the

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Dutch government. After having facilitated the rural development in first years, the national government gradually handed over its responsibility for rural development to regional and local authorities andthe private sector. This resulted in more self-governance for citizens and enterprises.

Our analysis shows that oncehierarchical (national) governance declines in landscape conservation and biodiversity, public (provincial or municipal) and private initiatives respond to this withdrawal of central authority. Studies from other regions support our claim that leadership shifts from the hierarchical structure to self-governance and that collaboration and new forms of governance emerge as a response (Andrade and Rhodes, 2012). However, commitment from all parties needsa constant shift from hierarchical governance towards open co-governance and self-governance and back.

Richerzhagen (2011) mentioned six success factors on access and benefit sharing ofbiodiversity protection. We compared these six factors (property rights, asymmetric information, administrative complexity, governance, time lags, and market structure) with the results of our case study regions (Blom-Zandstra et al., 2015). We identified four additional key factors which we consider to be even more important: 1) establishing a system of rewards in building a good 'market structure'; 2) a mix of governance forms and alternation between these forms; 3) visionary leadership with networks in both public and private sector; 4) time for new ideas to ripen and for growth of commitment among actors.

In the three regions different forms of cooperation emerged, which wereimportant for the development of a common outlook for the region, to anticipate on possibilities for action, to start pilots and to generate financial means for the region and for famers (Blom et al., 2015). Establishment of a system of rewards appeared to be an importantfinancial incentive. Nevertheless, a stable market has not yet been established.

CONCLUSION

The shift towards an integrated multifunctional use of rural areas is becoming a widely supported pathway for Europe's countryside. Some agricultural practices have already proven to be successful in providing public goods.

We concluded that producing, implementing and governing the concept of farmer-managed public goods, was successful when done by farmers in close cooperation with local governing bodies and other actors, while the national government steps back. Four key factors appeared to be most important: 1) establishing a system of rewards; 2) mix of governance forms and alternation between these forms; 3) visionary leadership with networks in both public and private sector; 4) time for new ideas to ripen and for growth of commitment.

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WG17 - Civic agriculture for an urbanizing society: production models, consumption practices and forms of governance

After the pioneering work of Tom Lyson in 2000, the qualifier of 'civic' for agriculture and food networks has become more widely used in the literature on rural studies. Nonetheless a univocal and clear definition of what makes agriculture and food networks 'civic' is still lacking.
Civic agriculture is often associated to positive externalities: economic and social development, inclusion and food democracy, rural development, agrarian justice and ecological citizenship. It also associated to the diffusion of agro-ecological practices and short supply chains: community supported agriculture, farmers' markets, Solidarity Purchasing Groups are usually considered forms of civic agriculture. Still the essence of 'civic' values are collective values, so that civic agriculture is essentially an agriculture that bases its production and distribution system on the respect of collective goods or commons.

- *What does imply to say that, in the economic process of food production and distribution and in different contexts, civic agriculture must take into account land, natural resources and food as commons?*
- *How a civic agriculture centered on the 'economy of the commons' may respond to new demands and challenges emerging from an urbanizing society?*
- *What in that respect is the role played by farmers and other producers, consumers and other actors in the food network?*

To look at civic agriculture from the perspective of the 'common good' implies new production models, new consumption practices, new forms of governance. This Working Group encourages papers that analyze from a theoretical and empirical perspective the emergence of forms of civic agriculture in the North and South of the planet, the role they can have in developed and less developed countries and regions, the systemic changes they are bringing at level of productions, exchange, consumption and governance, taking into account the concepts of multifunctionality and co-production, food justice and ecological citizenship, horizontal subsidiarity and new forms of coordination between the state, the market and civil society organizations.

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Food Self-Provisioning in Hungary

Balázs, Bálint[1]

***Abstract* – Food self-provisioning (FSP), a non-market source of local foodsis often regarded as an important component of civic food systems (Renting 2012).Recently FSPin post-socialist societies has been depicted as a socially inclusive practice compliant with principles of sustainability, unrelated to market transactions. Discourses on the political as well as the advocacy level about the benefits and potentials of food relocalisation have been proliferating,while the economic significance of FSP has often been downplayed in the academic literature without presenting quantitative or qualitative evidence about the scopeof and motivation for FSP activities. Based on a representative survey this paper analysesthe spatial and social extent of FSP practices in Hungary, a CEE country still in her post-socialist cultural transformation phase. It also explores the motivations for FSP as experienced by producer-consumers.**

***Keywords* – food self-provisioning; Hungary; post-socialism.**

INTRODUCTION

Food self-provisioning, growing one's own food is an important component of civic food systems and a non-market source of local foods (Renting 2012). The concept of producer-consumers have been introduced to refer to food self-provisioning, which is characterised by attachment to and access to agricultural land, displaying experiences on having or using a garden, field or orchard. FSP has been examined on various levels (nation, region, household, individual) and through various perspectives (micro and macro) and disciplinary foci. For example studies in food security underlined that cities have differing degrees of food self-provisioning capacity but rarely enough to satisfy their own food supply especially in wealthy capital cities (Porter et al., 2014).On the household level it is also apparent that local food advocates' well-intentioned slogans to 'buy local' or 'grow your own food' are not simple transactions; rather, such practices must be considered within the broader food provisioning context (McIntyre & Rondeau, 2011). Rural sociologists further explored that self-provisioning and inter-household exchange is prevalent in post-socialist rural Hungary; where household economic behaviour is characterised by labour force attachment and heavy reliance on social welfare programs (Brown & Kulcsar, 2001).Focusing on the household level (and also on the under-valued family or under-recognized friendship networks) FSP has been recently revisited as quiet sustainability (Smith & Jehlička, 2013). It is defined by "practices that result in beneficial environmental or social outcomes, that do not related directly or indirectly to market transactions, and that are not represented by the practitioners as relating directly to environmental or sustainability goals" … "Theirs is not a fulfilment of environmental obligations, an attempt to achieve 'resilience', or a response to limits, but the daily practice of a satisfying life. In other words it is not just that the journey to sustainability is less difficult than is sometimes presented – large sections of humanity may already be on it without the need to proclaim the fact loudly" (2013: 156). In another article Jehlička& Smith (2011) further argues that household food production in post-socialist societies could be regarded as a practice compliant with principles of sustainability. It is not so much a survival strategy of the poor building on the legacy of irregular food supply in the state socialist area, but a socially inclusive practice flourishing in local agro-ecosystems.Therefore, the main question this paper explores is how food self-provisioning (FSP) practices are experienced by producer-consumers in Hungary, a CEE country still in her post-socialist cultural trans-formation phase.

METHODS

The research considers the extent of and motiva-tions for FSP practices in Hungary. The paper draws upon a quantitative and qualitative research conducted in 2012-14 on FSP to reflect upon the underlying mechanisms and processes. According to the research design, the empirical data was collected and analysed in three stages. Firstly, in total 10 semi-structured interviews were analysed with people active in FSP, and also cross-examined in the light of 2 policymaker and 2 expert interviews. Interview participants were identified through personal contacts and mirrored the heterogeneity of stakeholders in local food communities. Interviews lasted between 60 and 90 minutes, took place at urban settings and in interviewees own environment (Patton, 2005). All interviews were tape recorded and transcribed verbatim before data analysis. The data analysis used thematic coding, a combination of meaning-condensation, categorisation and meaning-interpretation of the relevant themes (Steinar, 1996). Finally, a national level representative attitude survey was carried out in 2013 exploring the extent of and motivations for FSP.

MAIN RESULTS

The quantitative evidence comes from anomnibus survey carried out by the Medián public opinion and market research institute through 1200 personal interviews in November 2013.

Although the economic significance of FSP has often been downplayed or coined marginal our survey found relatively high proportion of FSP in the Hungarian population. As a keyresult it became clear that one out of three respondents (36 percent) has or uses a garden, field or orchard, either by their house where they live or elsewhere. The most important explanations people presented for producing their own food (fruits, vegetables, meat, eggs...) is saving money, or obtaining healthy and fresh food. Still, people often mention collective values as main motivation such as family food traditions or gardening as a shared hobby. Only a minority of respondents find FSP a family obligation, or helping relatives, or

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contributing to environmental protection.Almost two out of three people living in rural areas are active in food self-provisioning, while only one third of urban dwellers are engaged in production for own consumption. The most active gardeners are typically people without high school diploma, whereas only a quarter of people with high school diploma and university diploma are active in gardening. The elderly population is more active in gardening: half of people above 60 are producing food in their garden, compared to only one or two fifth of 18-39 year olds and 40-59 year olds. The tendency is that people from the lower income groups are more active gardeners: two out of five people in the lowest income quarter as compared to one fifth of the highest income group.As for the land management two fifth uses only natural soil fertilisation whereas only one tenth uses only synthetic fertilisers. As for pest and mould control people also tend to use natural protection methods. According to the results less than a fifth exchanges or donates one tenth of their harvest.

The semi-structured interviews further explored the interlinkages of motivations and collective values around self-sufficiency. Clearly, a main inspiration behind FSP is keeping a family tradition, which according to interviewees "also resulted in economic benefits and the feeling that the food contains our work" (56 years old social worker) or "when it is harvest time the whole family comes to help" (Marketing assistant from Budapest, aged 26). In this way, gardening is also a reconnection for families when as an interviewee explained "grandchildren are coming to pick up beans and the apricot, they always come to help collecting the fruit" (Pensioner aged 72). Sharing the harvest is a collective experi-ence that goes beyond the family when friends, neighbours are invited to pick their own. It is often connected to mutual learning such as for example how to carry out effective weed control (Pensioner, aged circa 80).

DISCUSSION

Family and friendship networks are important non-market source and channel of local foods. In this regard, FSPseems to have a growing future potential as perceived by producer-consumers. Self-sufficiency practices are only partially explainable by saving money, or obtaining healthy, fresh food. Collective values, such as maintaining family food traditions or sharing a hobby are similarly important. As for the spatial-social extent production for own consumption is democratic: it extends to all age and income groups as well as rural and urban dwellers.Food self-provisioning brings fundamental change in the food system without claiming a radical transformation. The various practices need to be further analysed to understand prospects of more localised, alternative food futures.Apparently, whereas on the macro-economic level the drive for growth is unquestioned,in the everyday consumption culture FSP is already leading the transformation toward sustainability for long.

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Civic Agriculture Experiences in Calabria Region

Castellotti T., Giuseppe G.[1]

***Abstract* - The paper aims to present some experiences of civic agriculture in Calabria region. The experiences con-cerning different aspects: processes of re-territorialization, critical consumption, social inclusion, the reuse of land confis-cated from the mafia.**
***Keywords* - civic agriculture, local devel-opment, critical consumption, reuse of land confiscated from the mafia.**

In an era of globalization, particularly of the agribusiness and food industries a growing number of farms are catching a way "peasant" and supportive of farming (van der Ploeg, 2006). Civic agriculture fits into thiscontext, linking the economic values and social values through the reconstruction of the local markets, there organization of services, networking, the changeof the basic values of trade (Di Iacovo, 2012). In recent years, in Calabria region are a growing number of civic farms. These farms have dynamism and capacity for innovation, but they are not widespread. The paper aims to demonstrate some experience of civic agriculture in Calabria region. Experiences concerning different aspects: processes of reconstruction of the relations between the local community and territory, critical consumption, social inclusion, the reuse of land confiscated from the mafia.

The paper discusses different experiences both in the territories concerned both history: the experiences of local development of the cooperative Il Segno, the experience of "GAS Utopie Sorridenti", the experiences of cooperatives "Arca di Noè" on social inclusion in the province of Cosenza and "Valle del Marro" on the reuse of land confiscated from the mafia in the province of Reggio Calabria.

The social cooperative "Il Segno" was created thanks to the strong urge ideal of lay nun from Bergamo, who decided to live in the small town of Fuscaldo, in the province of Cosenza. In 2001 she was the promoter of an association and then of a cooperative of only women living in Fuscaldo. The purpose of the association and the cooperative was to recreate the local community resuming ties between inhabitants and territory both through cultural activities and through the reconstruction of economic relations based on the principle of reciprocity. The cooperative has focused on textile production and the creation of a joint workshop for the sale of products. Agriculture is a choice that comes late, in 2011 with the management of publicly owned land in the municipality of Fuscaldo. The road ahead is still long, because they are stronger cooperation ties with the outside while weak ones with the local population.

The social cooperative Valle del Marro was founded in 2004 by the Libera Terra project of the association Libera for cultivation of land confiscated from the mafia. Valle del Marro grows organically around 140 hectares of land confiscated from the'ndragheta in some municipalities in the province of Reggio Calabria. The founding members are some young people of the province who have chosen to cultivate the selands to witness a break with the resignation to the Mafia mentality.

The history of the cooperative "Arca di Noè" begins about 20 years ago in Cosenza as volunteer experience to support young people with strong personal and family problems. Also in this case there wasa strong urge ideal, in particular of one of the promoters. The cooperative took over the management of greenhouses abandoned in an area adjacent to the city and moved there all activities. The company now has 2 greenhouses and sells products to local markets or through the GAS of Cosenza. Inside the building they were made also small workshops for theater and ceramics.

The experience of the Solidarity Group Purchase (SCP) of Cosenza "GAS Utopie Sorridenti" is interesting for the introduction of an innovative practice: producer and consumer programming with sowing and the consumer gives a pre-financing for the future harvest. This practice reverses the traditional relationship of the farmer with the market: producers and consumers cooperate to adjust production. So, the farmer does not bears the risk of failure to sell, and the consumer, through pre-financing, it becomes co-producer. In addition, there is available a market space where members of the SCP can buy the goods. These two levels are not present in all SCP in Italy: the market (the physical location) is the meeting place between consumer and producer to exchange views, to reach a partnership; the market becomes a moment of understanding in which the farmer tells about herself and this means that the exchange of products could become an exchange of relations, human exchange.

As is clear from the case studies reported, the Calabrian peculiarities of civic agriculture is the strong urge ideal. However, these are practices that do not want to be charitable assistance experiences but move towards the creation of complex economic ties that require a change of the values that are placed at the base of trade: from profit to reciprocity. Moreover, these practices require dialogue between sectors, subjects, skills, different policies that require a strong ability to design and create networks of reciprocity, and organizational governance.

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The social construction process of food quality: the case of organic certification in Brazil

F. Sacco dos Anjos , N. Velleda Caldas, S. Sivini[1]

***Abstract* – This paper focus on the organic certification system adopted in Brazil. The government has enacted one of the most advanced law in the world, which conceives two different system: certification by third party (TPC) and participatory guarantee system (PGS). We argue, that the latter can be considered an useful instrument for farmers operating in civic food networks as it is based on reciprocity, information sharing and knowledge building, involving both consumers and producers.**

***Keywords* – organic certification process, food quality, civic agriculture.**

INTRODUCTION

Civic Agriculture identifies "a diverse and growing body of food and farming enterprises fitted to the needs of local growers, consumers, rural economies, and communities" (De Lind, 2002, p.217). The concept of organic or ecological products fits within this general framework, nevertheless scholars have highlighted that a conventionalisation process of organic farming is going on (Fonte, 2008; Lutz, Schachinger, 2012; Follett, 2009). Focusing on the organic certification process we argue that the conventional certification by third party (TPC) can be considered an instrument useful for the food global (mass) market were the quality of organic products is defined by aesthetic properties as bright colour, uniform size, lack of imperfections. The participatory guarantee systems (PGS), "based on active participation of stakeholders and built on a foundation of trust, social networks and knowledge exchange" (IFOAM, 2008), can be considered, on the contrary, as an instrument available for farmers and consumers that seek to establish, maintain and strength local food systems. In this context, we assume that the quality of food is an attribute socially constructed, as well as a reality itself (Berger and Luckmann, 2003). In other words, "this identifies the idea that no event in itself is either objective or inevitable, but his causes and consequences depend on a vast array of social processes that attribute an identity to the event itself" (Barbera and Audifredi, 2012, p.2).

Brazil has been the first country that enacted a law were PGS and TCP are both validates as organic certification systems, producing the same effects. In this paper we analyze the TPC approach in comparison with the most important experience of PGS in Brazil, Ecovida Network of Agroecology which action represents a successful example of a social construction process of food quality adopting civic agriculture principles (Lyson, 2004).

ORGANIC CERTIFICATION SYSTEMS IN BRAZIL

The research adopted a qualitative approach. The data was collected through 10 in-depth interviews, semi-structured, with open and closed questions to family farmers, technicians of certification companies, members of non-governmental organizations, public and private development agents. The interviews has been realized in 2011 in Rio Grande do Sul (Municipalities of Ipê, Antônio Prado, São Lourenço do Sul and Pelotas). Written documents produced by the members of Ecovida Network of Agroecology were also collected and analysed as well as the content of their website.

The legal and institutional frame that regulates the organic certification systems in Brazil is the result of almost two decades of negotiations, where the forces, that act in the field of family agriculture as Ecovida Network of Agroecology, had an important and decisive role. Ecovida is the first and biggest network for participatory certification, operating actually in the brazilian southern states of Rio Grande do Sul, Santa Catarina and Paraná. Is an informal network active since 1998, organized in 28 regional "Nucleos" (cores), which serve groups in around 170 municipalities in the southern region of Brazil. There are 3.500 small farmers involved, belonging to approximately 300 groups. It can be considered as a typical case of "civic food networks" (Renting et al, 2012; Furman et al, 2014).

The original idea of Ecovida members was to create something alternative to conventional certification, especially since this was governed by a dynamic based on the "expert knowledge" and, as they underline in the interviews, by clientelism and vertical and asymmetrical relationships.

The certification by third party is, also often underline, not functional for farmers that sell directly to consumers and maintain linkages with their local community. PGS, on the contrary, is a certification system that is socially, culturally and economically adapted to the reality of the family, peasant and indigenous farming (Meirelles, 2010).

CONCLUSION

The Brazilian legislation has been recognized as a reference for other countries, as Uruguay, Chile and Costa Rica. The issue of PGS has been incorporated in the agenda of international organic farming organizations, as IFOAM that considered PGS "as an alternative and complementary tool to third-party certification within the organic sector and advocates for the recognition of PGS by governments" (IFOAM, 2015).

In this context, the importance of the Brazilian experience is unquestionable, especially to have initiated this debate (Torres, Rio Grande do Sul state) and for having demonstrated the interest of proposing an alternative system to the conventional certification. In effect, in 2014 "*PGS celebrated a jubilee. Ten years*

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have passed since the first 'International Worshop on Alternative Certification' in Torres/Brazil was organized, and the terminology and conceptual framework for describing what is now known as PGS was developed." (Kirchner, 2015, p. 134).

The TPC is based on the expert knowledge and the control of process is organized in a vertical way, in the PGS the emphasis is on horizontality, reciprocity, information sharing and knowledge building (Caldas and Sacco dos Anjos, 2014). The PGS can be considered helpful for small farmers cooperation, offering guarantees of food quality and supporting local markets. The process of guarantee is developed by participatory mechanisms involving producers, technicians and consumers. Social capital, trust and mutual relationships are on the basis of this system.

Nevertheless, it has to be noted that there is a lack in the government support of PGS in front of a big pressure applied by the private certification companies.

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Designing Resilient Citylands through Community Participation

Elena Christy & Dr. Karen Landman[1]

Abstract – Berg et al.'s (2013) concept of *Resilient Citylands* suggests that human settlements can be more resilient through a reintegration of urban and rural areas, and increased interactions of green-blue and built infrastructure by: 1) increasing access to recreation; 2) preserving biodiversity; 3) creating aesthetically appealing and efficient human habitats; 4) strengthening cultural identity 5) maintaining and developing ecosystem services; and 6) relocalizing primary production and ecotechnology. The goal of this research was to operationalize, and evaluate, a working framework of the *Resilient Citylands* concept through a participatory design case study. A framework was developed using key literature, key informant interviews, and a site visit. The framework was then evaluated by applying it to a participatory design project in the Protected Countryside in the Region of Waterloo, Ontario. Participatory design sessions, grounded in the framework, were held to engage stakeholders of KW Habilitation's *Our Farm* program in the design process. Outcomes of this study identify strengths and weakness of the framework, and explore opportunities and threats for introducing this framework using participatory design. Preliminary results suggest the framework is helpful to inform design decisions in a participatory design setting. Further application is required to explore means of increasing community buy-in.

Keywords – Civic Agriculture, Green-Blue Infrastructure, Participatory Design, Urban-Rural Linkages.

INTRODUCTION

The 1996 UN Habitat Agenda identifies sustainable development as essential for maintaining the health and longevity of human settlements. Recently, there has been greater emphasis placed on the resilient component of sustainability. The resilience component of sustainability suggests that it is not a stable state that can be achieved but sustainability is about a systems adaptive capacity (Ahern, 2013). This may be an adaptive capacity toward "former structure and function" (Berg et al., 2013) or an adaptive capacity to transform structure and function (Maguire and Cartwright, 2008; Shaw, 2012).

Berg et al. (2013) introduced their concept of *Resilient Citylands* with the vision of creating modern co-evolved urban and rural landscapes, through new interactions between built and green-blue infrastructure, with the goal of creating more resilient human settlements. The *Resilient Citylands* concept diverges from existing sustainable development theories, methods and tools by its emphasis on the resilience component of sustainability and its goal of re-integrating urban-rural landscapes.

To date the *Resilient Citylands* concept remains largely conceptual. As such, the goal of this research was to operationalize the *Resilient Citylands* concept into a working framework. This was accomplished by developing a working framework of the concept and evaluating this framework by applying it in a transdisciplinary design process. Ahern (2010) argues that in order to achieve landscape sustainability, profes-sionals and stakeholders should be jointly involved in the transdisciplinary process of "goal determination; integration of local knowledge, perceptions, and values; evaluation of alternatives; and implementation, monitoring and management" (p.157).

METHODS

Developing the *Resilient Citylands* concept into a working framework was an iterative process involving key literature, two semi-structured key informant interviews, and a site visit.

The framework was evaluated by completing a participatory design case study of KW Habilitation's *Our Farm* program's rural location. KW (Kitchener – Waterloo) Habilitation, a non-profit organization, delivers services and support to people with developmental disability throughout the Region of Waterloo. Due to *Our Farm's* success in 2014, KW Habilitation hopes to expand their on-site food production and create a place of recreation and social inclusion for their participants and the larger community.

The site's peri-urban location offered opportunities to explore urban and rural linkages. Additionally, the site provides valuable ecosystem services and opportunities for biodiversity enhancement, as it is located in a regional groundwater recharge area and adjacent to provincially-significant woods.

The participatory design case study involved: 1) a participatory design session with KW Habilitation staff and program partners that incorporated the framework both explicitly and implicitly; 2) a participatory design session with the *Our Farm* program participants that incorporated the framework implicitly; a design based on the outcomes of the participatory design sessions; and a final design presentation and collaborative evaluation.

Data collected throughout the participatory design case included an online participant evaluation of the first participatory design session in order to evaluate the session and the *Resilient Citylands Transdisciplinary Design Tool*; a verbal participant evaluation of the second participatory design session; an evaluation of the design; and the researchers observations and reflections. The data was then analyzed using a SWOT (strengths, weaknesses, opportunities and threats) analysis. Variables attributable to the *Resilient Citylands* framework were

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categorized as strengths and weaknesses. External variables attributable to the participatory design sessions were categorized as opportunities and threats.

RESULTS

The Resilient Citylands Working Framework

The final *Resilient Citylands* working framework developed for this research consists of an introduction, vision, guiding principles, characteristics, design process, preliminary design goals, large-scale design features, a glossary of terms, and an appendix containing a transdisciplinary design tool. Six guiding principles of the *Resilient Citylands* concept were identified. They include: re-integrated/co-evolved urban and rural landscapes; prioritizing green-blue infrastructure; contextual expression; relocalization; scale and connectivity; and complementary and supplementary systems. The characteristics of the concept were distinguished by answering the following questions: How are design problems framed? What are the inherent values? What are the desired functions of the design elements? At what scale is the concept relevant? How is resilience defined? What is the desired outcome(s)? What design process will be most effective? What is the role of the landscape architect? Preliminary design goals were categorized into six categories: 1) recreation, health, and social interactions; 2) biodiversity protection and development; 3) human habitat structure and function; 4) cultural identity; 5) ecosystem services; and 6) primary production.

Strengths of the framework

Many of the online evaluation respondents felt the *Transdisciplinary Design Tool* was easy to under-stand (50% of respondents, n = 8), helpful (86% of respondents, n = 8), and applicable to the site (75% of respondents, n = 8). The framework provided a context for the researcher to introduce other potential aspects of the site beyond those initially identified in the participatory design sessions that resonated with participants. In addition, the framework provided structure to the participatory design sessions and the design evaluation, which increased participant's capacity in regards to the principles and goals presented in the framework.

Weaknesses of the framework

The majority of online evaluation respondents reported that the framework did not change the way they thought about the site (71% of respondents answered, n = 8). The implementation of the design and management of the site has significant long-term implications that are not addressed in the framework.

Opportunities of the participatory design sessions

The majority of online evaluation respondents reported that the participatory design session were enjoyable (88% of respondents, n = 8) and reported feeling heard (88% of respondents, n=8). The design evaluation responses suggest that the participatory design sessions were successful at fostering a space to generate a design that reflects the vision of the various stakeholders.

Threats of the participatory design sessions

Not all participants were able to review the materials provided prior to the first participatory design session (38% of respondents did not review material prior to design session, n = 8). It was challenging to incorporate the framework into the participatory design session in a way that encouraged community buy-in and demonstrated its potential benefit to the project.

DISCUSSION

Results suggest that the *Resilient Citylands* framework is helpful to guide and inform design decisions in a transdisciplinary setting; however, more thought and reflection is required to consider: a) how the framework can be introduced in a way that generates greater community buy-in; b) how the framework might be incentivized; c) the important role the project's 'gatekeeper' plays in knowledge sharing; and d) the role of the designer in bringing new concepts and frameworks to the design process.

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Self-organisation of CSA in Austria: Transdisciplinarity in Action

Stephan Pabst, Marianne Penker[1]

***Abstract* – Addressing challenges of the dominant food regime, food citizens develop alternative food networks. Some stay within their niche, others become mainstream. Some maintain their transformative capacity, others adopt to the dominant system. One rather young civic food network is the Austrian CSA movement, whose members want to gain more sovereignty without losing transformative capacity. In an action research project, we, the researchers and a collective of activists, farmers and consumers, gained more insights in the potentials and challenges of the growing Austrian CSA movement and developed a shared knowledge on its goals, motivations and strategies. A questionnaire, answered by 177 CSA members of 10 CSAs and phone interviews with 16 CSA farmers and subsequent group discussions showed that the activists, consumer-members and farmers broadly share goals and motivations, but also identified diverging levels of willingness to engage for a common CSA movement. Participative and emancipatory methods were applied such as appreciative inquiry, open space and group work to start a well-informed bottom up process towards institutional change that is built on sovereignty and self-organisation.**

***Keywords* – Community Supported Agriculture, Selforganization, Sovereignty, Action Research**

INTRODUCING THE AUSTRIAN CSA MOVEMENT

To challenge the dominant food regime (Brunori et al. 2011, Schermer 2015), food citizens create alternative food practices and civic food networks (Renting et al. 2012), such as Community Supported Agriculture (CSA). In CSA, consumers become members of an agricultural initiative and the farmers produce food for them. The risks of production are shared by the members through pre-financing, practical assistance and co-ownership (Renting et al. 2012, 300). Moreover "CSA is seen to empower people by providing an arena, in which they can act on their principles and against the values of the global food system and in which they can learn about food production and so become informed and enthusiastic activists" (Cox et al. 2008, 206).

Since the first CSA started in Austria in 2011, farmers of currently 20 CSA groups together with consumer activists have been building up a network. The first CSA meetings were organised via the "CSA for Europe" project (2011-2013). Since 2013, they have met twice a year. During the Austrian Nyeleni forum in April 2014, participants felt the need for more consumer involvement and insights into their motivations and willingness to contribute. With the constant growth of the CSA movement, the issue of a common vision and strategy as well as the question of how to organise, and how to share associated efforts became further burning issues.

THE TRANSDISCIPLINARY ACTION RESEARCH APPROACH

A co-learning process combines Jahn et al.'s (2012) concept for transdisciplinarity with action-research (Charles 2011) and activist-research (Lisahunter et al. 2013). Transdisciplinary action-research aims to intertwine a real-life problem with scientific questions to generate new knowledge (Jahn et al. 2012) and allows "learning processes that create meaning, enable self-determination, increase competence, and have impact, and are thus empowering to the participants" (Helmfrid et al. 2008). A research-group of CSA-farmers, CSA-members and researchers drafted the research design and research questions.

Informed by appreciative-inquiry-interviews and intense debates, we designed a questionnaire, which was the first intervention. In Dec/Jan. 2014/15, 177 consumer members of 10 CSAs responded on their motivations and engagement (here we present the respondents' agreement to predefined statements, which we had derived from literature, on a 5-point Likert scale). Additionally 16 CSA farmers stated their motivations in semi-structured phone interviews, which we transcribed and coded. The results (Pabst 2015) were presented in February 2015 at the Austrian "CSA Spring Meeting", which was the second intervention. In an openspace design, the participants developed a shared understanding of motivations and goals and started working on a common vision statement and tasks for the Austrian CSA network, thus defining the rules for future self-organisation.

RESULTS ON MOTIVATIONS AND SELF-ORGANISATION

Motivations of Austrian CSA members are comparable to the results of past surveys mainly carried out in the US. More than 85% of the respondents prioritized "high-quality food", "organic and fair foodproduction" and the "support of local, 'regional' agriculture" as their main motivations. With a little gap, but still motivating more than two thirds of the respondents, followed: "political and economic support of alternative forms of agriculture", "independence from the market" "political statement towards change", "political influence on Food and Agricultural Policy", "food sovereignty", "transparency of production" and "direct relation to farmers". Motivations like "community-building", "getting to know similar minded persons", "direct participation" and "short distances in food distribution " were only pointed out by one third of the respondents.

In contrast, only 2 of the 16 CSA farmers referred to "high-quality food". Farmers were mainly motivated to "build a new way of economy" (11/16) followed by "resource-conserving, sustainable agriculture" (9/16) "financial security", and "direct interaction & abolition of anonymity" (both 8/16). Whereas 7 out of 16 farmers mentioned "practicing agriculture that makes

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sense" and "awareness raising/education", less than a third referred to "regional food production" and "solidarity".

Engagement of CSA-members: More than 50% of respondents are already "spreading the idea for recruiting new members for their initiative", "paying a solidarity fee to support members with less income" and "supporting awareness raising and political engagement via the internet forum and membership of the Austrian CSA-network". Spreading the CSA-idea and coming out of the niche are declared CSA-strategies for the majority of respondents, but the willingness to engage beyond their own CSA is limited. Most of them are willing to take part in events, but only a minority is prepared to organize future events representing the CSA-initiative and supporting the start of new initiatives. Only few perceive "facilitating the communication between farmers and members and among members" as their business. Even less are willing to take over active functions in their CSA or engage in public relation work. It is remarkable that 63% of responding members want their CSAs to build a network with other CSAs, food-coops, the Nyeleni movement and other civic food networks, but 51% are unwilling to financially contribute to these networking activities.

The results show, that currently and probably also in the near future, CSA farmers and a minority of active members are bearing the main efforts for community building, communication and knowledge transfer, which are pre-requisites for self-organization and sovereignty. This confirms the critique that CSA might rather increase self-exploitation of farmers (Cox 2008, 206). Rather than the community supporting the farmers, it is again the farmers, who educate and motivate the consumers.

The 12 farmers, 14 members and 16 interested activists, who participated in the workshop laid the foundation for institutionalizing the existing selforganized Austrian CSA-network, by drafting a vision statement: three columns based on the principles of food sovereignty. The participants identified three work-packages and associated working groups for institutionalising the CSA-network: 1) Supporting the foundation of new CSA-initiatives, 2) Public relational work and awareness raising activities and 3) Coordination of experience sharing and networking of CSA initiatives.

CONCLUSION

The participants considered the action research approach as useful intervention for developing a shared vision and common tasks for self-organisation. Both outcomes are hoped to further strengthen the Austrian CSA-network during its growth-process and to protect their ideals from being captured by outside market or state forces.

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Public policy for family farming in Brazil: the role of mediators in the reconnection between farmer, food, and community

Pacifico D. A, Desconsi C.[1]

***Abstract* – The present study aims to analyze the role of mediators in the reconnection of farmers, food, and communities. The data presented were collected through ethnographic research. The analysis used the theoretical framework of Public Action Sociology. It is concluded that the centrality of the role of mediators, also known as implementing actors, lies on the articulation of public policies along with the existing local strategies; different translations and appropriations of the goals so that they relate to the local priority axes; adjustment of the administrative staff; and, finally, the proposition of adjustments to the public programs.**

***Keywords* – mediators; family farmer; public policy.**

INTRODUCTION

Considering the role of the State in the analyses of public policies has remained the central axis of a set of approaches that aim to explain their effects, impacts, and results (Muller and Surel, 2004). Such consideration holds an explanatory importance, particularly regarding the formulation of public policies and the centrality of the State in this step. On the other hand, such approaches have considered the participation of the organized civil society in public policy formulation and implementation. Thus, studying public policies from the standpoint of Public Action Sociology has been a way of considering them a product co-produced by the society and the State (Lascoumes and Le Galès, 2012).

In post-redemocratization Brazil, a growing participation of the organized civil society is seen in the processes that implement public policies towards family agriculture. Such transformation requires an in-depth analysis of the social changes engendered by this practice. In this sense, the present study is part of the author's Doctorate thesis – currently being developed in the Graduate Program in Social Sciences in Development, Agriculture, and Society (CPDA). In this part of the thesis study, the goal is to analyze the role of family-agriculture public policy implementers in reconnecting farmers, food, and communities (Hoffman, 2008).

The starting point is the hypothesis that the farmers – when they are the protagonists of the local territorial development processes –, by becoming implementing actors of public policies, employ strategies to congregate efforts for a common goal so that the public policies add strength to the ongoing processes. With such characteristic, the analysis of mediators will allow understanding to what extent the elements connecting farmer, food, and community are present in the semi-arid region of Brazil. This research is inspired by the work of the nongovernmental organization *Centro de Agricultura Alternativa do Norte de Minas Gerais* (Center of Alternative Agriculture of North Minas Gerais – CAA) with plural family farmers[2] of the north of the state of Minas Gerais.

METHODOLOGICAL PROCEDURES

The ethnographic research was carried out in three steps (2013/2014/2015) in 16 cities of the north of the state of Minas Gerais, in the area known as *Território Serra Geral*, as shown in Figure 1. It used, besides dense description, participant observation, the experience of the communities, and semistructured questionnaires for the 58 interviews carried out with representatives of the government and community leaders.

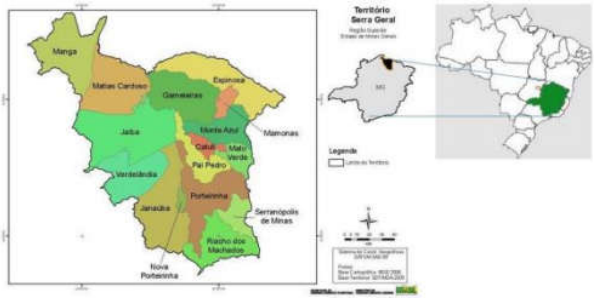

Figure 1. Território Serra Geral, north of the state of Minas Gerais, Brazil.

CHARACTERISTIC OF CAA'S WORK

Comprising family farmers and contributors, the *Centro de Agricultura Alternativa* has acquired, over the first decade of the 21st century, know-how in strategies to cope with the semi-arid climate, particularly regarding the long drought periods. Such experience has had the cooperation of the Brazilian Semi-Arid Articulation (*Articulação do Semiárido Brasileiro* – ASA), a network of organizations that comprise over a thousand organizations in the semi-arid region. The work derived from the joint actions of the ASA and organizations such as the CAA bring together different social technologies appropriate to the local necessities and had also acted in empowering different ways of social organization, food and nutritional safety, and income generation. This encourages different associations between man and nature.

Strategies such as the community bank of local seeds (*crioulas*) have built long-lost social barter

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[2] This classification includes: Geraizeiros, Caatingueiros, Vazanteiros, Quilombolas, and Indígenas

relations among farmers, besides strengthening relations of trust and solidarity since carrying your own seed is a synonym of autonomy and safety. Likewise, the water cisterns for human consumption and for irrigation have provided dignity to thousands of families that can enjoy water at home for cooking, laundry, showering, and quenching thirst. And not only that. The reservoir targeted at production has played a key role in the families' food safety, i.e., the production for consumption and commercialization. Hence, developing agroecologic production technologies was required, which has both guaranteed health and an agriculture reconnected with nature by means of practices that favor balanced fauna and flora.

Furthermore, the influence of the CAA on the sustainable use of the local biodiversity must also be taken into account. Located in the Cerrado biome, in a transition area with Caatinga, the CAA incentives farmers to practice extractivism, mainly of fruits, and follows product processing and commercialization in territorialized networks. The methodology developed by the CAA of farmer-to-farmer follow-up has proved innovative and fruitful by bringing communities together and by developing collective strategies to solve specific problems.

THE WORK IN IMPLEMENTING PUBLIC POLICIES

Starting in 2010, with the institutionalization of the technical support program, the CAA took on the role of implementer of the national policy of technical support and rural extension. It expanded the number of technicians-contributors and has taken on the challenge of articulating its action axes – its know-how and the central issues of the *Território Serra Geral* – with the public policy goals. In this sense, institutional learning and reorganization of procedures can be noted when the growth of the administrative staff is seen to meet goals and render accounts, as well as through efforts to translate (Lascoumes and Le Galès, 2012) public policy actions into the organization's thematic axes. Such axes consider the organization's main action lines while observing the needs of farmers and communities in the territory. Just the same, the goals and actions of the public programs the CAA began implementing must deal with such priorities. There lies an important element of appropriation and translation.

Therefore, it has been a key issue for the CAA that the actions of the national policy of technical support and rural extension match the water technologies of coping with the semi-arid, the agroecological production processes, and the short commercialization circuits, which, in turn, are responsible for connecting farmers to the cultural, food, and solidarity networks in the territory (Lyson, 2004).

The exercise of translation and appropriation of public policies has matched the intended territorial ideals, granting visibility to traditional peoples and communities, strengthening land disputes, and reconnecting them around the agroecological local agri-food system. At the same time, it is seen that the leading role of organizations such as the CAA has guided changes and adjustments in public policies.

FINAL CONSIDERATIONS

Public Action Sociology helps understand the organized civil society and the State in an interdependence relation regarding the implementation of public policies towards family agriculture. It highlights, above all, the different translations and appropriations done locally. In this sense, the public policy going through the local public action system – via the implementing mediators – allows us to observe how, in the north of the state of Minas Gerais, the work of a non-governmental organization such as the CAA is able to bring together governmental actions – with their own goals and characteristics – and its local territorial development strategies. In this sense, therefore, the CAA's territorialized action network, by developing coping strategies for the semi-arid, enables, along with public policies, reconnecting farmers, food, and community.

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Linking governance and embeddedness: a socio-spatial approach to food networks

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***Abstract* – Driven by food-related health and environmental concerns, governments, private actors and civil society are increasingly thinking about new ways to organize the food system. As a result, new networks are emerging that are characterized by a new type of governance and embeddedness. This paper discusses the need to consider the links between network characteristics, governance and embeddedness to gain a deeper understanding of interdependencies in food networks. Based on an exploratory analysis of nine local food networks in Flanders, Belgium a socio-spatial network approach is presented. This approach includes the diversity of actors and institutions involved in food networks and how they are interconnected.**
***Keywords* – governance, embeddedness, food networks**

EMERGING FOOD NETWORKS

The consensus on increasing rationalization, efficiency and intensification that guided food system organisation since WWII seems to have lost its ground (Renting et al., 2003; Spaargaren et al., 2012). A new logic has emerged that incorporates new values: alongside economic efficiency and rationalization, health- and environmental concerns are considered equally important (Spaargaren et al., 2012;Wiskerke & Viljoen, 2012). Driven by these concerns, new networks are emerging that aim to establish new relations between food system actors. These networks can also be referred to as alternative food networks, because they offer a social, spatial and/or economic alternative to standardised food supply networks (Watts et al., 2005; Roep and Wiskerke, 2010).Since they aim to establish new linkages, the focus in these networks is no longer merely on e.g. farmer organisations, food retailers and processing industries; but also previously excluded actors are actively included in the development of new food networks (Wilson, 2001). For example farm shops are a way to reconnect producers and consumers, to regain consumer trust and to establish new institutions that guarantee food quality, food safety and a fair price for everyone involved. This example illustrates that besides changes in food production, processing and consumption, these emerging networks are accompanied by new values and institutions (Renting et al., 2003; Spaargaren et al., 2012).

These new types of governance are characterized by their embeddedness. Roep and Wiskerke (2010) distinguish four types that are relevant to food networks: societal (e.g. cultural or political background), network (i.e. network structure and actors' places in it), territorial (i.e. localization of the network) and socio-material embeddedness (i.e. agro-ecological setting of food production) (Hess, 2004; Roep and Wiskerke, 2010). Combined, these multiple dimensions of embeddedness are key to establish shared values and rules in the food network, to involve the local community and society and to reground food in its particular agro-ecological setting. Hence they are key to the governance of food networks (Roep and Wiskerke, 2010). Because of the link between the development of food networks, governance and embeddedness, this paper proposes a socio-spatial network approach that provides an integrated perspective.

METHODOLOGY

This paper draws upon qualitative research that was done as part of a case-selection process. The aim of this selection process was to select two food networks that promote themselves as 'local'.Another important criteria was that the food networks had to involve diverse types of actors. This was necessary to eliminate highly centralized star networks (e.g. direct sales networks) and decentralized networks (e.g. linear food supply chains)in order to study more complex processes of regulation and governance. Next, exploratory interviews were conducted with the representatives of nine initiatives in Flanders, Belgium about the actors that are involved, the (in)formal rules in the network, the functional roles of the actors, the embeddedness of the network, etc. The following section discusses the results of this analysis.

NEW FOOD NETWORKS IN FLANDERS, BELGIUM

Building on the differentiation Watts et al. (2005) make between weak alternative food networks and strong alternative food networks, two types of food networks can be distinguished within the nine initiatives that were studied. A first group consists of networks that promote regional food and production as a means to generate regional development,to stimulate local economies and/or to address a miss-match between the rural and the urban. This is in line with what Watts et al. (2005) define as weaker alternative food networks: the emphasis is put on the food that is circulated in the network, and less on the network itself. In our sample, these networks were initiated by public actors building on policy regulations. As a result, actors have to work under setinstitutions. Furthermore, these networks rely on subsidies, what implies that there are requirements associated that cannot be influenced by involved actors (Héritier, 2001). Nevertheless, there is no legal bond tying the actors to the network, so they can leave if they do not agree with them. An issue that stems from the leading role of public actors, is that it can be hard to find actors that are willing to take over that leadership role when the policy program ends. In order to deal with

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this, actors are being connected through meetings and in the collective making of agreements regarding the production, processing and distribution of the food products. The leading public actors determine the boundaries and stimulate others to shape the network according to their view within the set boundaries.This also stimulates the creation of an informal network, what would be beneficial to the provision of new ideas and impulses into the governance process (Loorbach, 2010). This type of governance where public and private actors cooperate, can be called co-governance (Héritier, 2001). In our sample, it seems that because of the central role of public actors, weaker food networks are characterized by a weaker socie-tal and network embeddedness. However, within the net-works, measures are taken to increase these types of embeddedness.

The second group are networks that have originated from grassroots initiative in response to concerns regarding food quality and/or safety. The emphasis is placed on the networks the food products are circulating in rather than on the products themselves, referred to as stronger alternative food networks by Watts et al. (2005). An important aim of these networks in our sample is community building, which they achieve through contacts during delivery/pick-up of the food products and through the organisation of meetings and events. They strive to connect the members of their network – both within types of actors (e.g. amongst farmers) as between (e.g. consumers-producers) – through face-to-face contact. This helps to establish an informal network that supports the formal one (societal embeddedness), and stimulates trust between actors involved. These informal networks are beneficial for governance because they help actors to create new institutions that are representative to their values (Héritier, 2001).As for the weaker food networks in our sample, also the stronger ones are not bound by legalities. Because the network is regulated solely by private actors, this is called self-governance (Héritier, 2001). The stronger food networks in our sample are regu-lated through self-governance since only private actors are involved in the regulation. Further, the societal and network embeddedness seems higher because the network emerged from society itself and was often initiated by actors that already knew each other. Maintaining and nurturing the embeddedness is an important goal.

Although these two types of networks have different em-phases and different ways to establish network embedded-ness, the territorial embeddedness is constituted in a similar way. For the nine food networks that were studied, spatial delineation is in all cases based on administrative boundaries of the public actors involved, regardless if this involvement is active (e.g. participating in the network) or passive (e.g. through legislation in an area). Specifically, the localization of the network is limited by territorial boundaries. This can be hindering if networks want to expand beyond those boundaries, but can also be beneficial because the network can use territorial policy and characteristics to promote the food products they are circulating.

A SOCIO-SPATIAL NETWORK APPROACH

The results of the exploratory research discussed above illustrate a link between embeddedness, governance and network structure. This paper proposes a socio-spatial network approach that takes this link into account and allows to understand interdependencies between actors, institutions and territorialities, and the development of a food networks' social and spatial structure.

As a first step, a descriptive analysis of the food network reviews its social, spatial, institutional characteristics to gain a general understanding of how the network is organized and of its (political, cultural, historical) background. Further, this allows to identify the main social actors and institutions that are involved in the network. Second, a systemic approach based on social network theory is taken to analyse the food network. Through in-depth interviews with the main actors involved, the analysis focuseson the characteristics and trajectories of actors and institutions involved, their interdependencies and the modes of coordination that are used. This is operationalized with a qualitative method of social network analysis that looks at both social and spatial relations.

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Towards a network around civic agriculture in the Province of Pisa

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***Abstract* – This paper aims at exploring the pathway towards the creation of a network around the principles of civic agriculture in the Province of Pisa (Tuscany, Italy). The research is part of the process towards a local Food Plan, aimed at coordinating public policies, civil society and private initiatives, to foster the access to a healthy and sustainable diet. In this context, the experiences of civic agriculture have played an important role, highlighting the centrality of agriculture in the animation of rural areas and in the rural-urban relationship and becoming a point of intersection amongst several vital areas for local communities. The research methods consisted in a first monitoring of civic agriculture experiences, a second round of indepth interviews and in a more targeted focus group. The research has confirmed the presence of an expressed willingness to create a network of farms engaged on issues of sustainable food and sustainable local development. However, some critical points emerged with respect to the process of network building. Brokerage activities appear crucial to reinforce the relationships amongst the farmers and civil and institutional actors engaged in food related issues.**

***Keywords* - Civic agriculture, Civic farmer, Brokerage activity**

INTRODUCTION

As part of a wider trend, during the last decades, there has been a renewal of interest in agriculture in the territory of Pisa (Tuscany, Italy), thanks to the central role that agriculture plays in the animation of rural areas and in the re-construction or reinforcement of the rural-urban relationship. In that regard, it is emerged the multi-dimensionality of food, point of intersection amongst several vital areas for local communities (environmental sustainability, health, culture, ethics, economy etc.).

This reflection has involved over time a growing number of citizens and developed the interest of policy makers. In that context, also in this territory, since 2010 a Project for a Food Plan was promoted, in order to coordinate policies and actions around food, starting from the creation of a common language, the definition of shared goals and the clarification of the competences and areas of action of the various actors involved (Municipal administrations, local health agency, hospitals, NGOs, organizations of civil society etc).

The commitment of some local farms in experimenting and developing forms of agriculture that combine food production with the principles of "civic agriculture", appeared since the beginning as a central factor in the realization of this process.

Described for the first time by Lyson (2000) observing the US experience, civic agriculture enhances the positive contribution of those farms that maintain or re-acquire the capacity to interact with the social context in which they are embedded, and actively contribute, with their work, to the health and the vitality of the local community (Lyson 2004). With regard to the last point, several studies analyzed the social impact of some kind of civic agriculture, describing how the presence of these experiences impacts positively on the development of sense of community and of civic engagement among citizens (Obach and Tobin, 2014).

While exploring the characteristics of the civic agriculture in the Province of Pisa, this research focused more specifically on the social innovation that can develop from this experience, through the relationships amongst the farmers and within the wider multi-actor network in which they are embedded. Starting from the role of the civic farmers in the local community as perceived by the farmers themselves, we analysed their capacity to interact with the other farmers, underlying the factors enabling or hindering the process of network building.

METHODS

The research methods consisted in a first monitoring of civic agriculture experiences, a second round of indepth interviews and in a more targeted focus group.

The first monitoring involved 48 farmers, through an on–line questionnaire asking general information about the farm activities and the degree and form of involvement in specific networks. Most of these farms already belonged to specific networks, such as those of social farming, of custodian farmers, of Solidarity Purchase Groups (GAS), of other short food supply chains, and of didactic farms.

Thanks to the relationships of the farms, this first monitoring also allowed to widen the data base of civic farms until to 67 experiences.

In order to better evaluate the awareness of farmers and the acknowledgment of their role as innovators, a second in-depth questionnaire was sent to 20 farms already involved in the first monitoring: we selected the most consolidated initiatives in the province and asked about the values they refer to and, among them, which ones they communicate to the outside. In the second part of the questionnaire we explored the farmers' relational activity, to understand the level of interaction with other farms and organizations.

As final step of the research process we organized a focus group with 15 civic farms: the aim was to validate the results of the analysis and to share a common "charter of the principles of civic agriculture" around which to build a network in the Province of Pisa.

RESULTS

Civic agriculture links farmers to consumers, fostering the development of shared identity and interests between them and among the farmers themselves

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(Smithers et al. 2005). The goal is to create a community committed to sustaining the ecological and social aspects of production (Hinrichs and Lyson 2008). The results of our research are in line with these assumptions.

Farmers showed a general awareness about their role in the rural community; most of them carry out environmentally friendly farming practices (low impact agriculture, organic farming etc.), pay attention to the quality of products and of the relationships with citizen-consumers. Respect of traditions, biodiversity preservation through the cultivation/breeding of local species, protection of local ecosystems result to be the main inspiring values for farmers.

Farmers considered equally important their role in increasing the knowledge of the "rural world" amongst citizens of all ages and in creating a more direct relationship with them. This commitment is fulfilled through the relationships developed both with the activities of tourist accommodation and with the various initiatives of short supply chain.

Awareness raising and education activities are linked to the renewed pride that farmers show towards their core business, the production of "fresh, honest, healthy, high-quality food". The research has also highlighted both the need of civic farmers to get in contact with each other and to get an acknowledgement of their contribution to public wellness by local public institutions. Farmers ask to public Institutions more support in the enhancement and communication of the strategic role of civic agriculture. When talking about Institutions farmers refers not only to Administrations but, in general, to all those organizations who play a role in foodrelated issues (production, consumption, cultural and social aspects behind these practices and negative consequences of inappropriate behaviors).

These needs underlie the idea of the creation of a multi-actor network around civic agriculture in the Province of Pisa, which can support interaction and cooperation amongst farms and with the other local actors: currently, however, these needs are well expressed but not clearly concretized.

DISCUSSION AND CONCLUSIONS

The perspective of creating a network around civic agriculture perfectly fit with the new approaches and new directions of the European Policy, in particular for Rural Development, as well as with the goals of the Pisa Food Plan. In this context, cooperation between different actors becomes a strategic tool for the production and consumption of sustainable food.

The international and Regional scenario clearly indicates the need to stimulate a "bottom-up" and interactive approach in order to ensure sustainable local development. The enhancement of collective action to achieve common goals is essential in this scenario and civic agriculture can be a space of encounter of the needs of farmers, citizen-consumers and local administrations.

Civic farmers of the Province of Pisa are aware of this role and have shown a willingness to participate pro-actively to the sustainable development of the territories and the communities in which they are embedded. Although the establishment of the network around civic agriculture in the Province of Pisa appears not only justified but also desirable, being an important contribution in the governance for innovation, the network is not yet established. The difficulty of bringing together different actors, as well as of stimulating the overcoming of an individualistic view toward a common identity and collective action, still remain the main critical element in the process of network building.

Concluding, a strong brokerage activity able to reinforce the relationships amongst the farmers and amongst these and civil and institutional actors, through the definition of a common set of values and objectives, appears necessary, in order to foster collective action and lay the foundations of a collaborative governance around food related issues.

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Urban food gardening and urban farming: an analysis from a theoretical and empirical perspective

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***Abstract* – The purpose of the paper is to identify the functions and the main characteristics of the urban gardens in Rome. The nine cases studies examined show how the initiatives are promoted by private subject, when in their single form, or as collective projects when the aiming to achieve a more social function.**

***Keywords* – urban food gardening, urban farming.**

INTRODUCTION

During the past ten years, both public policy and scientific research have tended to pay increasing attention to what is referred to as "urban gardening" and "urban agriculture" (Ernwein, 2014). In most Western European cities, a growing number of administrations are trying to develop a policy of "urban agriculture", while in the city of Rome the phenomenon is somewhat spontaneous or driven by the foundation *"Campagna Amica"*. Despite the transformations that have happened in the last fifteen years, Rome is still a green city; in fact of its 129.000 hectares there are approximately 43.000 hectares of green space (and 40.000 sq.m. of these are urban gardens), with another 50.000 hectares being agricultural cultivations. In this context, urban food gardening has evolved from the war-time gardens, born out of the subsistence needs of families, to social gardens designed to share cultural values, create social inclusion and provide environmental education. Essentially, the urban agriculture in Rome is a spontaneous phenomenon linked to the necessity to reuse green areas, which are often degraded, and where there is land speculation. The urban gardens are almost always established by willing and keen citizens in order to defend and manage their own territory. The locals can also use them to help build stronger social relationships and provide opportunities for sharing. The paper examines nine cases study and focuses on the management and the functions of these spaces, whilst also trying to classify them into their different types.

METHODOLOGY

The empirical analysis concerns the urban area of Rome divided into 15 districts. At first we conducted four interviews with representatives from the municipal Green Spaces Department, the coordinators of Zappata Romana's website, the director of the association *"Silvicoltura Agricultura Paesaggio"*[2] and the Local Forum Coordinator of the European project SIDIG-MED. Subsequently we chose the cases study from an specially made database. We also started the urban garden list on the Zappata Romana's website, onto which information has been added. The information uploaded is: the types of urban garden (gardens shared, vegetable garden shared, garden spot and didactic farms), the name of the promoter, the ownership of land, the original motivations, the volunteers involved in the management, the dimensions of the plots, and the sharing and the formalities of attribution the gardens. A total of 68 sites have been classified into six types of gardens, through the methodology adopted by the project SIDIG- MED. The figure 1 shows the map of the case studies obtained through GIS.

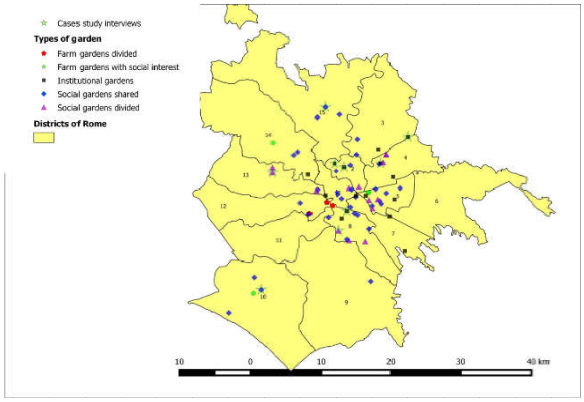

Figure 1. Cartographic representation of 68 sites in Rome

According to the different types, nine cases studies have been selected and we also interviewed the urban garden promoters (table 1). Details of the gardens were collected in 2014 through a questionnaire which was divided into three parts: general information, management information and economic information. According to this information, we proceeded to a second classification based on two criteria: 1) The main actor who manages the garden; 2) The functions of the garden.

As regards to the former, we have distinguished the urban gardens managed by farmers (urban farming) and those managed by associations (urban food gardening). As regards to the latter, seven functions have been indentified: business, social-leisure well-being, educational gardening, therapeutic, agri-environmental, cultural heritage, experimental. Finally, for each one case study, we have analysed the two most important functions.

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[2] We would like to thank Paola Marzi (Municipality of Rome) and agronomist Franco Paolinelli.

Table 1. Zappata Romana's urban garden classification, based on the different types of SIDIGMED project

Types of garden	number	% over the total	Cases study interviews
Social gardens shared	34	50	3
Social gardens divided	14	21	3
Institutional gardens	14	21	1
Farm gardens with social interest	3	4	1
Farm gardens divided	3	4	1
Total	68	100	9

Sources are from our elaboration

RESULT

In Figure 2 we classified the nine case studies according to their major and the secondary functions. The two urban farms are managed by a farmer who organizes part of the fund for a fee to the locals. The economic function is the most important objective here but the leisure time aspect is also key. The principal function of the second type of urban farm is to be therapeutic. The investment are reduced to a minimum and the economic results are achieved thanks to the volunteers who, for different reasons, provide their labour at a low cost. The three social gardens are on land in public ownership and they are mainly considered as places from which to educate new generations about the environment and food, as well as being places to share values and promote social inclusion. An initial enrolment fee covers the management costs. Furthermore, in the three shared social gardens the educational aspect is prevalent, and this function is connected to the leisure time activity provide and the enhancement in people's quality of the life. In others it is the cultural value that is paramount. Finally, the institutional garden has risen in an university space, and is managed all those involved (students, lecturers and their dependents). This case study represents a real model of green governance and of collaboration, undertaken in order to merge three types of core activities (environmentalism, agriculture and food), and to appropriate urban spaces for the common good.

DISCUSSION

These urban gardens represent a spontaneous phenomenon, tied to the necessity of keeping and enhancing green urban areas which are often degraded or subject to speculative building. Their presence underlines citizen's wish to regain their own spaces, abandoned areas or localities where there is crime. The most important function is social, because the gardens become new meeting points for local residents. For this reason, the phenomenon is more cultural than economic. The people who look after the gardens are more often students, graduates, employees, environmental mothers, rather than the unemployed, immigrants, the dispossessed or those in economic difficulty.

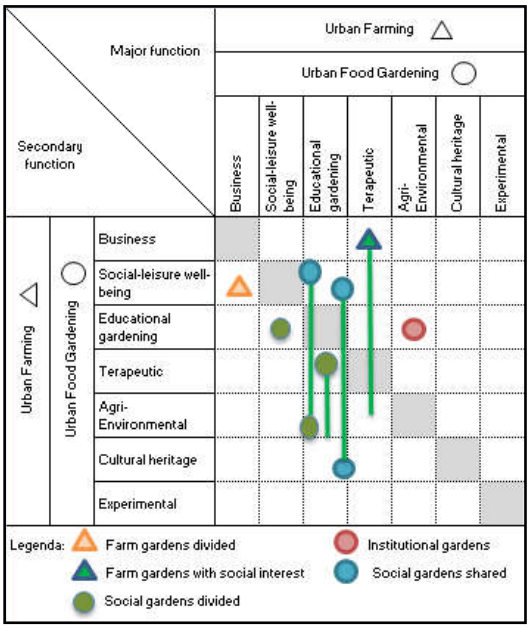

Figure 2. Classification adopted for the case studies of Rome

CONCLUSION

These urban farms and the urban food gardening schemes studied here can be considered as new forms of agriculture within an urban context. Both of them represent a direct link between the production and consumption of food and provide evidence important social value. They are embedded in local communities by local people, and are therefore different from traditional rural agriculture food systems (Mougeot, 2000). For this reason it is necessary to deepen our understanding of this phenomenon and work towards suitable governance strategies for such initiatives and the ways in which they can be included in future urban agricultural policy making.

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Peasant Economics in the Twenty-First Century: building a "polis" in the wild

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***Abstract* – The structural features characteristic of present-day humans are the same as those of the line of 3.5 million year old hominids to which we belong. From the beginning of humankind, food has played a crucial role in creating communities. Indeed, the changes in the early hominids that made language possible relate to their history as social animals in close-knit interpersonal relationships associated with collecting and sharing food. Conversely, nowadays the *food economy* is the most evident symptom of human alienation. Thus, the basic assumption of this paper is that *civic agriculture* based on the *economy of the commons* needs to rediscover the original nature of food, namely an element of mutual cognition and community creation. We explore how a rethought peasant agriculture can be crucial to such a goal. Nevertheless, peasant economics does not appear feasible in urban society mainstream economics and this creates the *paradox of sustainable development*. The Solidarity Purchasing Group (SPG) experience in Marche Region, Italy, shows the main features of this paradox and offers an effective perspective to investigate the role of peasant agriculture in a post-industrial society.**

***Keywords* – Peasant economy, habit loop, quick fix.**

INTRODUCTION

We all live in a world where we have no idea what is going to happen, in terms of the future. The extreme uncertainty about the future creates a vacuum in which the concept of economy itself becomes a paradox. The point of reference about the future chosen in this paper is the following. For 2050, we need to reduce global greenhouse gas emissions by 40-70 percent compared to 2010, and reach the end goal of net zero emissions before 2100 (IPCC, 2014). However, currently, the global food system is responsible for up to one-third of all human-caused greenhouse gas emissions (Gilbert, 2012). As a result, given the present conditions in terms of climate, demography and technology, the world society should be capable of progressing, not regressing, toward a rural economy before 2050. Hypothetically, we can no longer produce material value with the exception of food, relying on a per capita availability of arable land, not matching the actual world population distribution, which is around 0.20 hectares at present.

On this premise, the most basic assumption supporting the present paper is that the industrial age is at its end and something is going to takes its place. As a result, this is a theoretical study based on an empirical setting, Marche Region (Italy), as a virtual experimental field to determine the role of a peasant agriculture in this hypothetical postmodern society. The central question in this article is the following: what will the role of smallholding agriculture be? In an industrial economy, a cyclical recession comes and goes, but for many countries, and for many people within each nation, what we are experiencing is another matter. I want to define the concept of *industrial habit loop* as the typical social routine in three steps: first get a job, second do what you are told, third retire. Nevertheless, this has lasted no more than a century. We are totally unprepared as this change is emerging as a tipping point, which makes it all the more critical. Our schools, our institutions, our living schemes – cognitive, psychological, cultural, economic, and political – are all built around this notion of doing what you are told and now we do not know what to do because there is an ongoing revolution with no leaders capable of governing it. We all want a *bottom-up* process to change society but the reality is that we are accustomed to always having someone who shows us the way and so we feel lost, without the ability to adapt.

The present study claims that peasant economics is going to be crucial in the XXI Century and not only within the context of backward economies but even in the most advanced economies (such as Italy for example). Peasant economics does not stand for "a return to the past". We need, at a world level the resilience, inherent in peasant farm systems, to overcome the inconsistent and unsustainable industrial agrifood system. The problem is that our political and cultural system are "urban centric" and the question is how to shift.

METHODS

The basic hypothesis on the shift needed in the food economy from a vicious urban centric model toward a virtuous rural centric one deals with a radical change – i.e. such as that which occurs with any rehabilitating alcoholic at an AA group – at a routine change level (Duhigg, 2012). The central question her is: how does a bad routine become a good routine? Fig. 1 shows a revision of the "Shifting the burden" model proposed by Senge (1990) here adapted to the food economy. The sustainable development path is represented as a "quick fix" or symptomatic solution to the problem symptom here represented such as the unsustainability of agri-food economy. The quick fix solution – in the same way as the intake of an aspirin to lower fever – makes the underlying cause more bearable. However, the quick fix solution does not resolve – it does not even consider – the hidden reason of the emergence of unsustainability. Besides, the quick fix solution becomes a routine creating addiction too.

This hidden reason for unsustainability – not so hidden really – is related to the fact that the *food economy* and *brain economy* are two sides of the same coin. Consequently, an effective path of change – the sustainability path in the lower side of Fig.1 – from "bad" habits toward a resilient economic system based on good "habits" is very difficult to prime and it requires a paradigm shift toward a food economy able

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to rest on an advanced peasant economy rather than on an only apparently "sustainable agriculture".

A shift in focus from conventional food supply chains to alternative food supply chains such as SPG experiences, emerging in many advanced countries, highlights the need to reflect on the issues posed above.

RESULTS

There are two problems facing these emerging PSGs. Firstly the environmental quality of the food, secondly equity in the distribution of value among the actors in the supply chain. Focusing on these problems, the strategy adopted by these groups is based on shortening the food chain by going directly to the food producers and asking for organic production practices and labels. Theoretically, by bypassing the intermediaries in the chain, the goal for better distribution value between the producers and the consumers can be achieved. Moreover, the *Short Food Supply Chain* reduces inefficiencies and the direct rapport between producers and consumers should guarantee a better degree of quality control. This is the *light side* of the SPG experience in many advanced economies such as Italy. What follows is a brief reflection on the *dark side* of the SPG experience from a behavioral economics approach. The consumer's brain interprets the explicit and implicit information related to the direct relationship with the farmers by incorporating their expectations – their subjective image of what organic food means in terms of ethics and environmental problem solving –. Not having experience of agricultural production, they can only base their preferences for quality on their trust in the producer (presence of a high level of *information asymmetry* in the market).

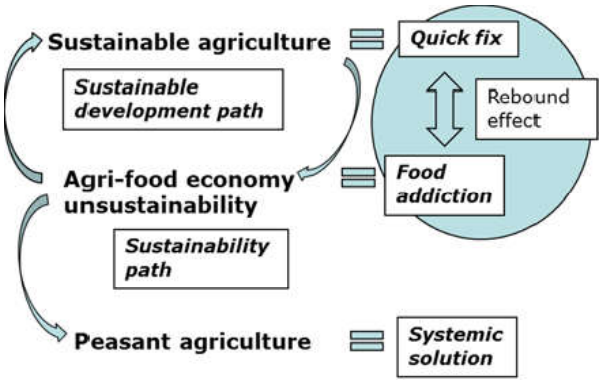

Figure 1. The hard truth on agriculture and sustainability

However, the issue is whether the farmer has the economic and social incentives to satisfy the consumer's expectations. The absence of incentives will trigger a problem of *conflict of interest* between the consumer and the producer with regard to the quality of food. To understand this the key element to consider is that in a SFSC such as a SPG the major delivery cost is sustained by the supplier and it is not certain that the better price guaranteed by direct selling will cover these additional costs (Belletti and Mancini, 2012). Thus, the producer who may be induced to self-justify and conceal a production method that does not satisfy the consumer's needs.

CONCLUSIONS

The epidemic anxiety from lack of time triggered by the rapid pace of climate change is conveying the ontological shift towards an agro-ecological paradigm in which an ecologically driven conception of *value* addressing social reproduction rather than capital accumulation is emerging. In this scenario, rethinking the mode and the role of agriculture is something inexorable. Referring to a peasant economy as a modern one seems to be a paradox if we do not scale up to what Gregory Bateson called a *third order change* in the learning framework, namely that relating to the way we perceive *the self* and the *external environment*. The concept of *repeasantisation* (McMichael, 2012) deals with this need of change towards values other than those of price and productivism in assessing the contribution of agriculture to human survival in a climate-challenged future. Imagine that the outline of new peasantry implies a revolutionary shift from an ever-increased urbanised society toward a modern rural based society.

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Shared and relational activities in civic agriculture: towards a non–individualistic conception of well–being

N. Bellanca, B. Rocchi[1]

***Abstract* – The quality of relationships among people is increasingly perceived as a crucial determinant of well-being. Despite this relevant shift, economic analysis is still deeply rooted to an individualistic conception of people acting and living together. In this paper we shall argue that to better understand the subjective and inter-subjective multiple dimensions of well-being, it is necessary to further deepen its conceptual framework to deal with its genuine relational essence.**

The several forms of civic agriculture and short food supply chains emerged in the last decades are an interesting case to highlight the limits of an individualistic conception of well-being. Within civic forms of agriculture people follow pathways of personal change affecting the relational dimension of their lives, according with the use they do of money and spare time. At the same time these personal pathways contribute to the emergence of rural economies and cultures as participatory or shared goods.

***Keywords* – relational goods, shared goods, well-being, civic agriculture.**

FOR A NON INDIVIDUALISTIC CONCEPTION OF WELL-BEING

In this paper we shall argue that, despite the growing awareness of the subjective and inter-subjective multiple dimensions of well-being, it is necessary to further deepen its conceptual framework to deal with its genuine relational essence.

A common feature to most of the recent elaborations about well-being consists in their relying on some form of methodological individualism. We define the methodological individualism as an approach so that «all knowledge about social phenomena can, at least in principle, be stated in terms of individuals: Social concepts can be defined in terms of individuals, social phenomena explained in terms of individuals, and macro-theories reduced to microtheories» (Udehn, 2002, p.498).

However, the well-being is not only "living well", but it is even more "living well together"; and the latter does not arise from the mere aggregation of individual behaviour (Deneulin & McGregor, 2010). The idea that some of the "collective" terms should not be defined by "individual" words, does not imply any metaphysical holism, according to which collec-tive terms designate absolutely emerging social totality, rather than their individual constituents. On the contrary, we have fruitful recent strands of literature – such as those on collective rights (Jones, 2014), shared agency (Roth, 2011) or agency team (Gold & Sugden, 2007) – that cannot be squeezed between the argument that the ultimate constituents of the social world are individuals, and the organicist opposite thesis.

The second weakness of methodological individualism on which we draw attention here, is the idea that individuals interact in social life as independent "entities", i.e. that relationships are exterior to, rather than constitutive of, the subject. On the contrary, according to a genuinely relational perspective, «the very terms or units involved in a transaction derive their meaning, significance, and identity from the (changing) functional roles they play within that transaction. The latter, seen as a dynamic, unfolding process, becomes the primary unit of analysis rather than the constituent elements themselves. […] Individual persons, whether strategic or norm following, are inseparable from the transactional contexts within which they are embedded» (Emirbayer, 1997, p.287). Relationships are not something that an individual "has". People become who and what they are in and through their relatedness to others. «… the interaction between persons mutually recognizing their right to exist is the only originally conceivable reality … The individual human agent is constituted as such when he is recognized and named by other human agents» (Pizzorno, 1991, p.220).

TESTING A SHARING AND RELATIONALAPPROACH TO WELL-BEING: RURAL LIFE AND CIVIC AGRICULTURE

We test our sharing and relational approach to well-being mapping a set of actions that by and large may be included in the civic agriculture narrative. A typology of behaviours results from crossing the nature of incentives affecting choices, the motivations followed in spending money and the resources used in acting. We use this typology to stress similarities and differences among different actions from a relational point of view and to discuss how personal pathways of change interacts at the meso/social level of rural context.

In Fig. 1 and 2 motivations are cross-tabulated against a classification of monetary sources used in acting. The resulting typology is used to map both the farmers' behaviour and the people's use of rural space for leisure during spare time. Interestingly, the framework seems able to well support the analysis of both so different economic behaviours.

The participation to rural life emerges as a multifaceted phenomenon, with actions that may be classified both among entrepreneurial and leisure behaviours, as in the case of "hobby" farming carried out on small family-owned holdings.

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Resources / Motivations	Using common resources	Using resources received by	Using earned money	Using borrowed money	Without money
Acting for oneself	Funding on farm investments with CAP financial support	Funding on farm investments with the husband/wife money	Purchasing a farm with profits from other activities to diversify assets	Borrowing money to finance on farm investemts	Hosting woofers during harvest time
Acting for weak relationships	Helping the Local Action Group to apply for a Leader Plus grant to promote traditional food	Non farming landowners joining the local farmers' association	Becoming a shareholder of the local farms' cooperative	Sharing liabilities for a loan to finance the activities of the local farmer's association	Hosting pilgrims and foot travellers in the family farm (Santiago Way)
Acting for strong relationships	Using CAP support to transimit the farm to children	Carrying out hobby farming with the family in the inherited small holding	Purchasing a rural house with garden for family holidays	Borrowing a long term loan to support the start-up of the son's farm business	Hosting relatives in the family farm during holidays

Figure 1. Resources and motivations in farming

Resources / Motivations	Using common resources	Using resources received by	Using earned money	Using borrowed money	Without money
Acting for oneself	Fishing alone in the lake of the municipality	Using an inheritance to purchase a luxury country-side villa for spare time	Purchasing only local food (locavore)	Borrowing money for spending vacations in a luxury rural resort	Joining the grape harvest during a holiday Woofers
Acting for weak relationships	Joining the Slow Food Group during a visit to a traditional cheese factory	Neo-rural residents joining the local action group to support local food specialties	Funding Community Supported Agriculture	Borrowing money to rent a country-side villa to host friends for playing golf	Working as a volonteer at the local Farmers Market Summer holidays as a voluntary worker at a NGO-managed non profit farm (Libera)
Acting for strong relationships	Sunday family trip in the surrounding countryside	Carrying out hobby farming with the family in the inherited small holding	Purchasing local foods for Christmas presents	Borrowing money to organise the daughter's marriage party in a country-side resort	Working at the son's farm during harvest time

Figure 2. Resources and motivations in using spare time

The persistence of small scale family farming is a typical feature of developed agricultures, where the increase of off-farm labour opportunities allows agricultural households to maintain land ownership as a family asset even when technical progress increases the efficient scale in farming, and to continue farming as a secondary source of income. Despite their small economic size these forms of farming often shows clear entrepreneurial features. Figure 2mapsactions that can be linked to a variety of motivations and incentives such as luxury expenditures, or the purchase of local food or the participation to short food supply chains, within a broader picture where the interactions between supply, demand and 'civic' forms of participation can be de-scribed.

Also non-monetary forms of participation to rural life can be included into the picture, both as a part of farming activities and as a possible use of spare time. Motivations are able to discriminate between economic and relation-driven behaviours: for example "hosting'" can be included among management choices of farmers, as in the case of wwoofers(reducing costs in labour intensive production processes) or among their mainly relation-driven actions, as in the case of relatives' holidays (during which a spontaneous contribution of relatives to farming activities is likely to be expected within an exchange of "regard"). The spare time map allows to discuss the different motivations underlying these forms of non-monetary exchanges. The self-interested motivations of *wwofers* (purchasing accommodation providing labour services) can be considered aligned with those of their hosts. Interestingly, the relational motivations can reverse the sign of the economic value of the supplied labour: while for the *wwofer* labour is a cost within a non-monetary transaction, in the case of voluntary workers or, even more, of parents working on the son's farm, labour efforts may become a direct source of well-being.

Most of the actions mapped throughout to the proposed typology, rely on a shared good that is often describe as "rural environment" or "territorial identity" (Ferrari, 2013). Individual goals of some of the described actions can be achieved only if such an asset is availabletogether with monetary resources. Thus, the beauty and the accessibility of the coun-tryside, together with its social attractive (such as the traditional cheese factory to visit with the Slow Food group) are the basis of the enjoyment of a family Sunday trip but are also an asset for producers promoting local food culture to enhance their business and to strengthen a local cultural identity. The achievement of individual goals (both in economic life and in living spare time) even in absence of monetary transactions confirms the existence of a shared good. Such a rural environment/context appear to be a "shared" good in the true sense: that is, in some extent it cannot be enjoyed/exploited without sharing it with other people pursuing their own goals.At the same time a relevant part of the value of such a shared asset results from the prevalence of relational or pro-social motivations in acting. The personal pathways of change are likely to affect the dynamic of the shared, relational assets they rely on.

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WG18 - Society Oriented Farming – working on the balance between market and societal demands

Entrepreneurship in agriculture is changing: Not only do farmers have to be technically capable in their production processes but they also have to be aware of the global markets demands, the (local) societal demands and legislation and environmental changes in an increasingly urbanizing world. In order to achieve business sustainability farmers need to be aware of these external pressures and adapt and develop innovative production strategies so that that all kind of stakeholders: consumer organizations, environmental groups, neighbours, regional and national governments, retail etc. are satisfied with the way these farmers produce. In the Netherlands for example, some regional governments already have legislation restricting farms in their development when they do not interact with society. Incorporating the interaction with society can be done in various ways depending the main farm strategy. This interaction of farms with society we call Society Oriented Farming which contains a wide range of different strategies and farming systems ranging from locally oriented farming systems (like civic agriculture) and more globally oriented agriculture.

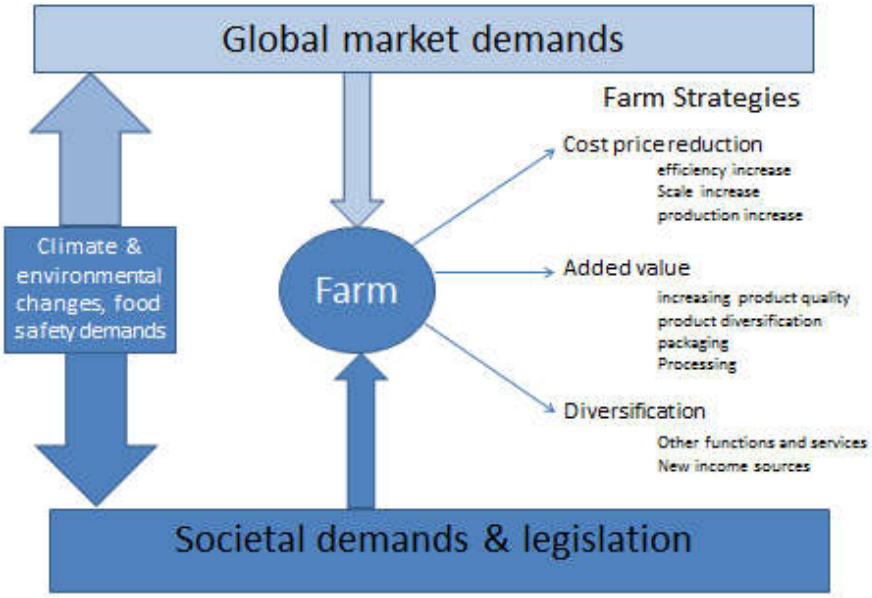

Fig. 1: Different farming strategies in relation to the positioning of the farm in the field between global market demands, climate change and societal demands.

Three main strategies can be distinguished in how farmers develop their farms (Fig. 1). In all strategies they have to anticipate on changes in the urbanizing world around their farm although the intensity and way of dealing with society differs between the strategies.

Goals of this working group is to present, discuss and reflect on the concept of society oriented farming and on cases of different farm strategies adapting the concept of society oriented farming.

Contributions addressing the following questions are welcome:

- *What are the drivers behind society oriented farming?*
- *How do farmers with different farm strategies co-develop their farm with society?*
- *How can farmers with different strategies learn from each other*
- *How can social innovation be stimulated in the agro-food system?*

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Jana Polàkovà, Czech University of Life Sciences, Czech Republic

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Society Oriented Farming: Involving society in farm strategies

A.J. Visser & D. de Jong[1]

***Abstract* – In this paper we introduce the concept of society oriented Farming (SOF): Farm strategies with a specific focus on involving (local and regional) society in different aspects of the farming enterprise resulting in maximal transparency and creating new business opportunities and societal involvement in the agricultural process. We discuss the context in which SOF is relevant, provide examples of different farming strategies in the Netherlands and discuss possible implications on policy, farming and society.**
***Keywords* - Society oriented farming, farming strategies, societal demands**

INTRODUCTION

European agriculture has undergone significant changes over the past decades. Due to economies of scale and in order to remain economically profitable, farm sizes and external inputs have increased and labor input has been minimized, resulting in less people working in agriculture. In addition to changes in the structure of agriculture itself, European society has also changed with citizens becoming more cosmopolitan (Bos 2008). In the Netherlands for example this has resulted in a gradual disconnection of society from agricultural production (Meerburg et al. 2009). This increased distance is not only driven by a changing society but also by the fact that corporate organizations and professional management have replaced individual buyer-seller transactions (Slingerland & Rabbinge, 2010) resulting in less interaction with the world outside the farm.

SOCIETY ORIENTED FARMING

Farm businesses are expected to contribute to multiple goals, including environmental protection, economic development and social cohesion.These goals will vary between Europe's diverse regions. Production and productivity alone are no longer the sole drivers of European agricultural and rural policy. In today's Europe, agriculture continues to be the receiver of a significant share of the EU budget, the goal of which is to enhance farm income stability. In turn, public policies require that farmers contribute to landscape, nature conservation, environmental issues and an attractive rural area for the urbanized population. Thus modernized agriculture has to be balanced between global market demands and (local) societal demands. This concept provides room for an innovative way of working and interacting with society: Society Oriented Farming (SOF).

We define SOF as: Farm strategies with a specific focus on involving (local and regional) society in different aspects of the farming enterprise resulting in maximal transparency and creating new business opportunities and societal involvement in the agricultural process.

Three main strategies have been identified in how farmers develop their farms within this environment: cost price reduction, creating added value and diversification (Wolf et al. 2007). We add a fourth strategy which has recently evolved: Society inclusive, a strategy in which new activities are being codeveloped with different civil actors (Fig. 1). In all four strategies farmers have to anticipate to changes in the urbanizing world around their farm although the intensity and way of dealing with society differs between the strategies.

Fig.1. Different farming strategies in relation to the positioning of the farm in the field between global market demands, climate change and societal demands.

EXAMPLES OF SOF STRATEGIES

I. Farming strategy: ***Cost price reduction***
Harry's farm: www.harrysfarm.nl
Harry's farm is a modern arable farm in the Netherlands with a traditional cropping scheme: wheat, potatoes, sugar beet and onions. The farm uses modern techniques for optimizing production and working as sustainable as possible. The farm has a website on which all activities on the farm are shown all year round in that way informing the public on food production, techniques, harvesting, storage etc. You can find pictures and movies of all activities.

Impact: the interaction with society delivers the entrepreneur ideas and early access to new developments. The good relationship with society helps to secure approval for business ideas.

II. Farming strategy: ***Added value***
Cheese farm: www.kaasboerderijbennesse.nl
Cheese farm Benesse produces yoghurt, butter and variety of cheese made from their own milk production. Their products are sold in their own farm shop. On the website they explain on how their

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products are being made. People are invited to watch the chees making process every Saturday.

Impact: the interaction with society is important for attracting new customers and collecting new ideas and developing new products based on desires of the public and finally receiving a higher price for the products.

III. Farming strategy: ***Diversification***
Farm Ridammerhoeve: www.geitenboerderij.nl
Farm Ridammerhoeve is a small mixed farm (15ha) in the direct proximity of Amsterdam. The basis of the farm are dairy goats. On the farm is a farm shop where they sell own products like milk, cheese, butter, ice cream and meat. There is a restaurant where you can by drinks or have a lunch. There is a room which can be hired for meetings. The farm receives a lot of schools for educational purposes. The farm has a playground and is free accessible for anyone.

Impact: the interaction with society is the basis of the business model in which all products are directly sold to the public providing high revenues. The farm receives over 250.000 visitors a year.

IV. Farming strategy: ***Society inclusive***
Farm Bioakker: www.bioakker.nl
The farm the Bioakker is an arable vegetable production garden with a professional farmer who gets a steady income through members from the nearby city of Zutphen paying a yearly contribution and in return get products from the farm. The members have the possibility to work on the farm and harvest themselves if they want to, they can also just collect the products. Members have a stake in the organization of the farm and in the selection of crops.

Impact: in this business model the society is an inclusive part of the farm being involved in different aspects of the farm process and providing money before the production starts, resulting in a good liquidity position of the farm.

DISCUSSION

Farmers who deliberately interact with society and incorporate that in their farming strategy can have different motivations for developing these relations and these may differ between different farming strategies. For farms with strategy III and IV the market is mainly a local market and developing relations with the surrounding society seems to be a prerequisite for success. But developing a relation with society is not just about creating new markets, it is also about creating opportunities and building networks. For all four strategies, the motivations (1) collecting new ideas for new business or products and (2) access to other (not agricultural) networks are relevant. For strategies III & IV the motivations (3) attracting new customers, (4) creating a steady group of customers willing to pay good prizes,(5) short chain development and (6)new forms of direct finance (crowd funding etc.) are important motivations. Besides these intrinsic motivations also more external motivations like (7)anticipating on new legislation may stimulate the development of society oriented farming strategies.

For example, in the Netherlands there are some provinces which have developed regional legislation to stimulate farmers to take SOF measures in exchange for development space for their farms. In other words, no dialogue with society, no possibility to expand the farm. This kind of legislation will probably have the biggest impact on farmers with a cost price reduction strategy (I). These measures are above national or EU legislation. Therefore we argue that the concept of SOF will differ over regions in Europe with more urbanized regions demanding more interaction with society. Overall, the concept of SOF therefore depends on how pictures of rural Europe interact with various development potentials, specific local economies and societal and policy frameworks.

There might be parallels between SOF and the concept of 'License to operate' developed in the mining industry, which is focussing on self-regulated behaviour between a company and community's demands and expectations. Therefore we argue that farmers can learn from each other to become more society oriented but also from the strategies from other industries and vice versa.

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Marriage of conven-ience between farmer organizations and milk industry, for a more resilient local milk value chain in Niamey

O. Renard, G. Ouseini[1]

***Abstract* - Between 90 and 95% of milk consumption in Niamey is produced with imported powder milk. It allows urban population to access cheap and safe milk products, but local milk is preferred by most of the population. The development of local milk value chain is hindered by high production costs and scattered production. Competing with cheap powder imports is also more difficult with UEMOA Common External Tariff on milk at 5% only, to favour poor urban consumers. A project developed in partnership with IRAM and national and regional organisations, Nariindu Project, is considering that trying to develop mini dairies to promote local milk, as it is the case in many West African countries, is not financially viable. It is proposed alternatively to facilitate linkages between farmers and milk industries interested in developing local milk products. To do so, a minimum of 3000 litres/day have to be collected, which is a challenge but also a strong impetus for local value chain, offering regular incomes for farmers. To reach this objective, collecting platforms are not only collecting milk, but also providing advices and inputs to farmers, animal feed being a strategic one.Collecting platforms are also key institutionaltools: owned by farmer organisations, they are linking farmers, milk collectors, industry and local authorities, for sound value chain and territorial development.**

***Keywords* – Local milk value chain, milk industry, Niger, collecting platforms, farmer services**

INTRODUCTION

The impact of recently signed trade agreements between West Africa and the European Union is considered by experts as potentially dangerous for local productions (CONCORD policy paper, 2013). It has been asked without success by civil society to protect local production, and particularly milk value chains, but the external tariff for this production has been fixed at 5% only, compared to 30% asked by African milk producers. If such low rateis insuring urban consumers' access to cheap imported milk powder, it is also seriously endangering local milk value chains, sources of income for hundreds of thousands of families, mostly nomad or semi-nomad. Literature on local milk value chains in West Africa (Corniaux, C., 2014) is focusing mainly on the development of mini dairies, and how to maximise added value for producers. But successful and significant examples are very rare, most of mini-dairies processing very small quantities of milk, for a limited number of farmers. Other mini-dairies are forced to use powder milk to be financially viable, even if they were initially created to collect and sale local milk (and often financially supported by international donors). Their business model is thus similar to milk industries, the latter working mostly with milk powder, but incorporating also local milk to improve quality (fat content).

The aim of the project is to propose new efficient mechanisms allowing smallholder farmers to be sustainably connected to milk industry, for stable, negotiated and regular incomes from local milk.

The hypothesis of the project is that, working directly in close collaboration with milk industry to sale local milk is more efficient in terms of impact on value chain development and income generation than developing alternative, nascent and fragile value chains, targeting niche markets. Another hypothesis is that local industry in West Africa can develop innovative partnerships with farmer organisations, not only to collect local milk, but also to offer local products to urban consumers.

METHOD

To reach this aim, the Nariindu project has sup-ported the development of two local milk collecting platforms (on 2 sites, distant of 50 kilometres from Niamey (Kollo and Hamdallaye localities)). Nariindu project is managed during 3 years (2012 to 2015) by IRAM Development NGO, in partnership with VSF-Belgique, Karkara local NGO, and two farmer associations (AREN, in Niger, and RBM, in West Africa).

To show the economic and social viability of such innovation, the project has monitored both quantitative data on platforms' turn over and impact at farmers' level, and qualitative information on various indicators, to assess the social acceptability of platforms and their services.

The quantity of milk collected has been regularly measured by both platforms and the milk company, on a daily basis. Financial monitoring has been conducted by the project on bi-annual basis, to measure progress and make recommendations.

The project monitoring and evaluation plan has measured some key indicators: daily incomes and expenses at farmers' level, qualitative information on changes in practices, gender issues, animal health status, and level of satisfaction regarding the services of the platforms. A baseline survey has been conducted in 2013, an end line survey in 2015. This survey was primarily designed to ensure satisfactory project implementation and monitor few key indicators, not for research purpose. Data collected and information should therefore be considered as indicative. More in-depth research is necessary to draw more precise and robust lessons.

RESULTS

Results can be described around 3 dimensions: economic, social and institutional.

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Economic results are described briefly on figure 1: daily milk collection can reach approximately 600 litres per day in pic season in 2014, approximately 1000 litres in 2015, thanks to better functioning of the two centres. This covers two thirds of the supply in fresh milk for the partnering milk company. The main remaining problem is the strong decrease in milk collecting before rainy season, period of high milk consumption, but also a period during which cow herds are moving south to access grassland.

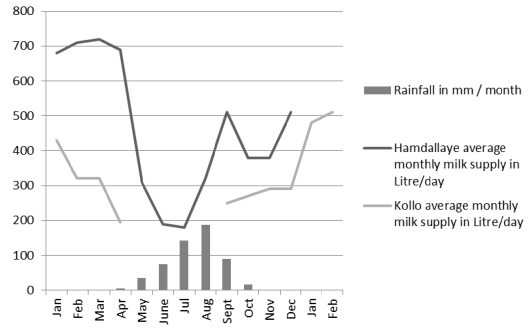

Figure 1: seasonality of milk collection (2014)

Approximately 1000 families are supplying milk, mostly poor families, richest owners beingtraditionally not selling milk, offering it to shepherds. One cow is producing 2 to 4 litres per day, one to two litres per family per day being sold. Data is showing (Figure 2) that the centreshave been chosen by most producersto sale milk after two years. This is due firstly to the service provided to farmers: daily milk collection and access to animal feed at negotiated price.

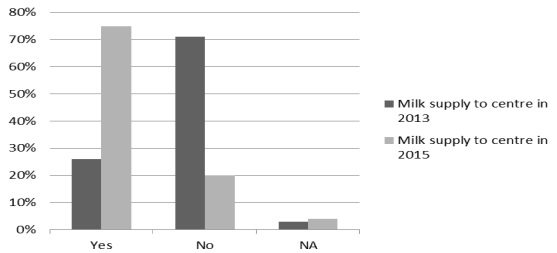

Figure 2: percentage of milk going to collecting platforms in selected villages (2013 and 2015)

Price negotiation is also one factor explaining the success of the platforms: the price increased from 300 F/L to 400 F/L at platforms' gate. Lastly, the project end line study has shown that the animal health status significantly improved during the project, not only due to veterinary medicine, but also to access to animal feed at critical periods. For the milk company, having access to milk in quantity and quality has allowed it to launch a new product (successful yoghourt with guaranteed 100% local milk), the added value being shared upstream with farmers.

Social impact at farmers' level is important. The impact on women has been particularly monitored, and figure 3 is showing that the status of women has changed positively with the change in milk practices. Selling on daily basis milk directly to milk collectors instead of having to go to local market two times per week is saving a lot of time for other activities. Besides, families are continuing to produce and sale traditional cheese for local consumption and occasional sales, at village level.

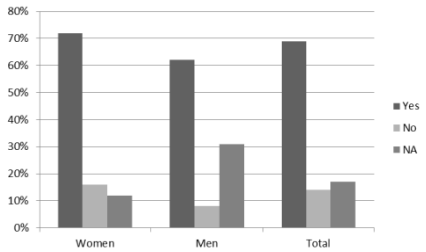

Figure 3: positive perception on status of women, by women and men (2015)

Institutional innovations are major ones, in terms of sustainability of the local value chain: the milk collecting platforms are insuring quality control, supply of animal feed and other inputs; but the fact that it is managed by farmer organisations instead of privately owned is facilitating dialog between farmers, organised collectors and the milk company.The farmer organisations are also legitimate to dialog with local authorities regarding legal enforcement of key state services: vaccination campaigns, access to animal feed with more transparent mechanisms, ensuring more enabling environment for all value chain actors. The dairy company is willing to develop other collecting platforms, but also to support the setting of mobile collecting tanks to go in grassland areas and the development of private milk "ranches", to be able to collect more milk from May to September.

The main weakness of this innovation is the limited management capacity of the farmer organisations: it needs significant external support by projects, and should be sustained by local experts; other recommendation to donors is to support the funding of alphabetisation for adults, specifically targeting women, as it is very efficient to help them to be able to catch more easily income generating opportunities.

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Society oriented and sustainable agriculture: an emerging paradigm in Québec (Canada)?

Marie-Ève Gaboury-Bonhomme[1]

***Abstract* – In Québec (Canada), more and more social groups want to influence agricultural development. Therefore, claims facing the agricultural sector are more numerous and diversified. Social groups' views correspond broadly to society oriented and sustainable agriculture. However, not all sustainability issues are integrated in government's and farmers' strategies at the same level. Some issues have been integrated for a while (e.g. water quality), others more recently (e.g. climate change), and some are not integrated at all or very little (e.g. agricultural landscapes).**
***Keywords* – agriculture, paradigm, sustainable development, societal demands, social groups.**

INTRODUCTION

In Québec, a French speaking province of Canada, there are about 30 000 farms. Since World War II, like in many other countries, government action in the agricultural sector has dealt mainly with economic objectives (produce more at the lowest cost). Government invests and creates programs to increase and stabilize farm income levels (Skogstad, 2008; Morisset et Couture, 2010). This paradigm, that we call here *government intervention for farm income protection*, is still dominant in the Québec government intervention today.

Even so, demands of social groups have been expressed during some public consultations since 1990. The largest one, the *Commission sur l'avenir de l'agriculture et de l'agroalimentaire du Québec* (CAAAQ) (Commission on the future of Québec agriculture and agri-food), was organised by the Québec government in 2008. Besides representatives from agriculture and agri-food businesses and cooperatives, a lot of social groups expressed their points of view at this Commission: environmental groups, consumers' associations, health sector, education, advisory and research institutions, municipal governments, etc.

All these groups express their views about the kind of agricultural development they want. They identify numerous issues facing the agricultural sector. To know these issues help understand drivers behind society oriented farming. The goal of this paper is to give a complete overview of these issues and verify if they broadly correspond to the concept of sustainable agriculture. In conclusion, it explores possible strategies that will allow farmers and government to face the issues.

METHODOLOGY

This analysis is part of our doctoral research about the evolution of paradigms (*référentiels*) and governmental intervention (*instruments politiques*) in Québec between 1990 and 2010. Our doctoral research is still in progress; only preliminary results are presented here. In the first stage of the research, we realized a qualitative analysis of 150memoirs presented at the CAAAQ by provincial or federal groups (we did not analyse regional or localmemoirs). Our analysis strategy was guided by Angué (2009), Paillé et Mucchielli (2008, p.261-267) and Pires (1997, p. 156-157). We coded each memoir with the software *NVivo8*: each paragraph (orsentence) was associated with an issue facing theagricultural sector. As the starting point of theanalysis, we used a list of issues that we identifiedfrom the literature review about sustainable agriculture (e.g. Parent 2001; Hani et al., 2006). Otherissues emerged during the analysis.

RESULTS

Hundreds of issues facing the agricultural sector were found in memoirs. We grouped them in about 30 larger categories. These categories are presented in Table 1 (next page) according to issues associated with the concept of sustainable agriculture (shown in italics in the table) proposed by the Food and Agriculture Organization of the United Nations (FAO) in its *Sustainability Assessment of Food and Agriculture systems* (SAFA) (FAO, 2014). In all, these 30 issues cover the most part of the issues proposed by the FAO (2014).

INTERPRETATION

Views of social groups about agriculture in Québec were more diversified in 2008 than in earlier decades. Protection of agricultural income, the dominant issue in government intervention since World War II, is still identified as an important issue, specifically for farmers' associations. However, this issue is drowned in a set of numerous and diversified social and economic issues. These numerous issues arise from representatives of agriculture and agri-food businesses and cooperatives, but also from lots of social groups outside the agri-food sector.

Social groups' discourses broadly correspond to the concept of sustainable agriculture. However, we cannot say yet that the paradigm *government intervention for farm income protection* has been replaced by a paradigm of sustainable agriculture: issues are not all integrated in government and farmers' intervention. Indeed, our preliminary analysis shows that issues can be grouped into four types.

First, the *emerging issues*: these have recently been the topic of public discussion, and they are neither well defined and documented nor integrated in government intervention; some of them are subject to opposite views and, often, value conflicts among groups. Second, the *developing issues*: these are more documented by experts and academics, and there is more consensus among groups regarding them. Third, the *mature issues*: these are well documented by experts and academics, they bring consensus among social groups, government intervention is well defined

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about them and most farmers include them in their strategy. Finally, the *declining issues*, for which social consensus is decreasing and government intervention is questioned and adjusted.

Table 1. Agricultural development issues identified by social groups in Québec in 2008 (preliminary results)

Investment, profitability and vulnerability to risk[a]
1. Net agricultural income
2. Competitiveness with other countries
3. Meeting market and consumers' demands
Fair trading practices
4. Political/bargaining power of the *Union des producteurs agricoles*, the main farmers' association
5. Economical/bargaining power of the major grocery distributors and food processing plants
6. Consumers responsibilities regarding food
7. Equity between countries in agricultural trade
Local economy
8. Contribution of agriculture in rural economy
Food safety and information
9. Labelling of GMO products
10. Food nutritional value
11. Control of the impact of antibiotics and hormones use, zoonosis and pesticide residues on food quality
Agricultural and environmental integrity[a]
12. Water quality
13 Soil quality
14. Climate change
15. Biodiversity
16. Animal health and welfare
Social well-being[c]
17. Psychological distress among farmers
18. Quality of life /work-family balance for farmers
19. Agricultural employees recruitment
20. Work conditions of farmers and farm employees
21, Need of and access to knowledge (formation, advisory services, expertise, academic research)
Equity
22. Access to and distribution of resources (e.g. funding, land, assets)
23. Support of specific groups (e.g. young farmers, small farms)
24. Right to food for vulnerable consumer groups
Governance and stakeholders[d]
25. Cohabitation between farmers and others
26. Government right to orient agriculture
27. Social acceptability of agriculture
28. Exportation without environmental/social impact
Cultural diversity
29. Agricultural landscapes
30. Traditional agricultural knowledge

a We grouped the 30 issues into the 21 issues of sustainable agriculture proposed by FAO in its *Sustainability Assessment of Food and Agriculture systems* (SAFA) (FAO, 2014).
b Include the following SAFA's issues: atmosphere, water, land, biodiversity, materials and energy and animal welfare.
c Include the following SAFA's issues: decent livelihood, labour rights, human safety and health.
d Adapted from SAFA's issues included in the governance dimension.

Conclusion

Overall, social groups in Québec call for a sustainable agriculture. However, not all sustainability issues are integrated in government's strategies at the same level. Some issues have been integrated for a while (e.g. water quality), others more recently (e.g. climate change), and some are not integrated at all or very little (e.g. landscapes).

Farmers adjust their strategies collectively and individually to take into account societal demands. Collectively, more and more farmers' associations measure their social and environmental impacts and take action to improve their production methods. For example, Canadian dairy farmers initiated the program proAction to ensure milk quality and safety and meet societal expectations about animal welfare and environmental stewardship. Also, the pork producers' organization of Québec published its first social responsibility report in 2013.

Individual farmers also take into account society needs. Mix of strategies are possible. For example, farmers can: 1) adopt a mix of environmental practices like soil conservation, fertilizer, pesticide, fossil fuel reduction, animal welfare; 2) adopt a mix of social practices like improving work conditions and workers' training; 3) plan farm development according to a long-term and a global perspective; 4) innovate (social or technological innovations are possible); 5) reduce financial and technical risks during the experimentation of new practices using public or private funds, exchanging information with others farmers and advisors, etc.

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From Good Agricultural and Environmental Condition to a shared responsibility learning platform

Jana Poláková[1]

***Abstract* – This paper covers a learning pathway from Good Agricultural Practice regarding water protection against agricultural pollution to common standards of Good Agricultural and Environmental Condition (GAEC) in the Czech Republic as a functional region. A shared responsibility platform emerges as a relatively neutral 'outsider' field for evaluation of transferability of benefits to civil society organisation as regards water and soil protection in tandem with farmers' profitability. Particular attention is paid to negotiating the pathway itself which isn't developing a new model, yet applying the tried well-known ones.**

***Keywords* – GAEC, natural resources, farmers**

INTRODUCTION

Today farmers make valiant efforts to work on the balance of market and society as they negotiate the drivers of technology, climate change, diet and population alongside pressures to natural resources. Market and society are not in conflict, according to late Lin Ostrom (2009) when they come to the significant challenge as to developing 'common kinds of heterogeneity that have independent effects and operate through diferent causal mechanisms'.

On that generic account, Good agricultural and environmental condition (GAEC) is a design aspiring to allow for farmers' profitability by setting agronomic standards at reasonable costs to farms, and responding to societal demands on water and soil protection and biodiversity. Ten compulsory GAECs have been set in 2003 by Fischler's rural development policy. GAEC linked up to the existing requirements on good agricultural practice (GAP)—GAP has been in existence as from the nineteen nineties, in order to ensure water protection to reduce nitrates contamination within Europe's vulnerable zones, as laid out in Table 1.

This January has seen GAEC transition to the common set of seven standards. In the Czech Republic for instance it encompasses Landscape features & invasive weed control; Buffer zones alongside water courses; Irrigation; Groundwater protection; Vegetation cover (cover crops, winter crops, post harvest management, or use of organic fertilization); Structural soil health via protection technologies for moderately erodible soils; No maize, potatoes, sugar beet, soy, sunflower cultivation on severely erodible soils; Organic soil health (manure fertilisation or leguminous cover crops); No burning of plant residues.

Defining Good agricultural and environmental condition is thus open to each county governance dynamic accentuating farmers' practice to accommodate social trust associated with the meeting point of very different social, cultural, economic and environmental legacy terms, especially in view of the four agriculture history dimensions; regional, supra-regional, EU and local. At this point I draw on Ostrom's other challenge that 'the core goal of public policy should be to facilitate the development of institutions that bring out the best in humans'. Two resulting questions are central: (i) Are GAECs at all needed when farmers maintain to possess endogenous practical skills? (ii) Isn't there a severe trade-off between the standards' aspirations and the successes achieved on the ground?

METHODS

This paper applies a shared learning pathway method, the starting point of which is in recognition of market drivers of agricultural production. In keeping with a comparative reference to the Czech Republic functional region, I take the opportunity to better understand the impact of farmers' profitability on civil society organisation regarding water and soil protection on as yet open pathway from GAP to GAEC. This meta-analytical approach takes grounding in a 'backward perspective', i.e. light literature reviews, intelligence from policy stake holders and empirical information as per key evaluators situated on the interface of complexity science, ecology, agronomy and micro-econimics. The hypothesis is that if farmers' profitability requires policy standards setting, and if their practice is to cohere with civil society organisation as regards water and soil protection, learning from each other is possible.

RESULTS AND DISCUSSION

A separate literature exists on farmers' a posteriori adaptations to soil and water protection standards as required by EU rural development policy reforms. Katherine Falconer (2000) offers the analysis of farmers' functioning in view of transactions costs to two Laenders. Iglesias et al. (2007) identify changes to water and soil resources as main agricultural determinants, thus underlining the need to maintain national GAECs as well as supporting standards simple to understand by farmers. Pavlinek & Pickles (2004) analyse the joint monitoring of the Czech republic efforts when'legal and regulatory frameworks have been rewritten and environmental, economic and political practices have been transformed in many important ways'. Yet each of these particular analyses is inadequate to justify GAEC's rationale.

Nevertheless dismissing GAECs isn't practical. For sure farmers complain about the red tape. 'All had to adapt farm management characteristics, although corporate farm businesses and cooperatives only to certain limits' (Simpach & Pechrova, 2013).

Yet inasmuch as farmers increasingly align around private standards, GAECs represent the distribution of

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Table 1. Evolution of GAEC within the EU

Practice at farm level	Point	For period
GAP		
Nitrate directive requirements (o) (cd)	Protect water resources to reduce nitrates contamination in vulnerable zones	(1994-today)
'Environmental measures' & 'maximum stocking densities' (v) (d)	Reduce adverse environmental impacts	(1993-1999)
'Environmental protection requirements & 'usual good farming practice' (v) (d)	Reduce adverse environmental impacts	(2000-2004)
GAEC		
10 requirements (o) (d)	To do the minimum landscape, water, soil protection practice; to maintain agricultural land	(2004-2013)
7 categories (o) (cd)	To do the minimum landscape, water, soil protection practice	(2015-2020)

Code: (o) obligatory rules; (v) voluntary; (d) different rules as per different countries; (cd) common frame – differing implementation rules

stakeholders' immense shared knowledge, as shown in Fig. 1, emerging via farmers' complex interactions at different dimensions in tandem with supporting rural development policy organisations.

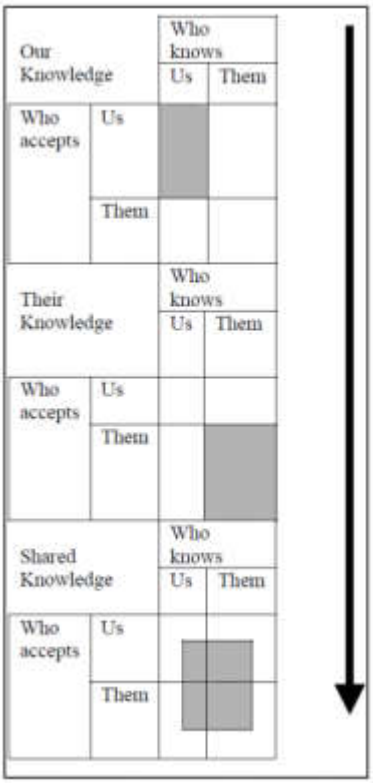

Figure 1. Stakeholder knowledge (Adapted from Diana Pound, 2004)

Note the secular evidence that 'untreated sewage, overuse of fertilisers and pesticides on agricultural land, and petroleum leaks led to largescale contamination of underground water resources' prior to 1989 (Pavlinek & Pickles). GAEC hence promulgates realistic learning lessons. On one hand, 'agricultural pressure on the environment has been much reduced' after the 1990s transition, i.e. natural resources now in good condition may have users who invest in good monitoring systems. On the other, 'with the reduction in point sources of nitrate pollution of water (e.g. from industry) the diffuse agricultural pollution is growing, with stable levels of nitrogen surpluses'. Hence GAECs epitomize mixed success so far though the time they have been implemented is still limited.

CONCLUSIONS

Our first conclusion then is GAECs seem needed, albeit the size of income support obtained by farmers surpasses the costs of complying, hence the result pays off to all farm businesses. Second, shared responsibility platform emerges as a relatively neutral 'outsider' field functioning for evaluation of transferability of lessons about the successful and the less successful GAEC standards. The next phase of this project has set out to scrutinize the results for water and soil resources protection and benefits or trade-offs to farmers.

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Good Food and Beyond: Food Supply Chains Outcomes and Societal Demands in the Italian Debate

Stefano Grando, Luca Colombo[1]

Abstract **– Food supply chains are firstly meant to provide safe and sufficient food, yet they have a wider range of impacts on people, society and environment. Societal expectations on food chains performances cover different issues and dimensions, and are frequently debated on the media. The paper presents the results of a survey conducted on the Italian media within the EU funded Glamur project aimed at identifying the more frequently debated food chain attributes, regarded as "areas of interest" around which the debate develops. The analysis has been conducted on about 300 articles, papers and other documents in representation of the various debate spheres (public, policy, scientific, market) and then validated by interviews with experts and stakeholders. 20 main food chain attributes have been identified, to be then attributed to their most pertinent dimension: Environmental (GHG emissions, Biodiversity, Pollution, Organic, Landscape preservation); Economic (Affordability Producers' income, National interests); Social (Food Activism, Traditional farming, Labour rights, Food security); Human health (Healthy food, Healthy diets, Food safety, Obesity); Ethical (Information, Territory, Food waste, Animal welfare).**
Keywords **– Media analysis; Food supply chains; Societal demands vs food chains**

INTRODUCTION

Food supply chains represent complex social constructions whose performances can be evaluated according to multiple criteria and perspectives. If they are firstly meant to provide food in an effective way (whatever this may mean), they have a much wider range of impacts on people, society and environment, which are socially defined, discussed and evaluated in the media debate. The increasing relevance food chains are being given in the public debate raised interest by researchers and scholars (Lockie 2006, Eriksen 208; Brunori et al 2013).

The paper presents the results of a survey conducted on the Italian media within the EU funded Glamur (Global and Local food chain Assessment: a Multidimensional performance-based approach) project, aimed at identifying the more frequently debated food supply chain attributes, mainly in relation to the local-global divide. These attributes represent "areas of interest" around which the debate develops.

METHODS

The survey was conducted through three main steps. First, relevant sources were selected in order to ensure a wide representation of positions across various debate spheres (public, policy, scientific, market). Then, single articles, papers, documents and press releases have been identified in each of the selected sources through a process based on the application of key-words. A total of close to 300 documents were examined identifying keywords. Keywords were eventually translated and condensed in attributes representing societal expectations on food supply chains performances. Scrutinised texts were allocated to their competent debate sphere, and listed in a word file with references and keywords enabling to trace back sources, spheres and attributes. Then all identified attributes were listed in an excel file: a preliminary list of 76 different attributes was set, finally shrunk to 20 through a process of selection and aggregation.

The research has been concluded by a set of interviews with experts and stakeholders, again covering different points of views and expertise and representing different constituencies.

RESULTS

The analysis led to identify 20 attributes, then grouped according to their prevalent dimensions.

- *Environmental*: GHG emissions, Biodiversity, Pollution, Organic, Landscape preservation
- *Economic*: Affordability Producers' income, National interests
- *Social*: Food Activism, Traditional farming, Labour rights, Food security,
- *Human health*: Healthy food, Healthy diets, Food safety, Obesity
- *Ethical*: Information, Territory, Food waste, Animal welfare

The five dimensions are all represented by at least three attributes (for the Economic) with a maximum of five (for the Environment), witnessing a balanced presence across the spaces of interest. Equally balanced among the dimensions are the attributes most and more centrally addressed by the sources ("Information", "GHG emissions", "Producers' income", "Healthy food"), confirming the wide-ranging coverage of debates and discourses about and around food chains performances.

As far as the interviews are concerned, the experts have generally confirmed pertinence and relevance of the attributes identified though the sources analysis, but have given an important contribution for their ranking and also for a critical review of their definitions (attributes like "Labour rights" and "Food safety", among the others, have been significantly enriched thanks to the experts' contributions).

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With specific regard to the ranking exercise, some attributes are universally recognised as crucial issues by the experts, notably among the others "Food security", "Labour rights", "Affordability", that have always been ranked at least with a 7/10.

Other attributes have been ranked differently, sometimes with an intrinsic polemic attitude, to highlight disagreement on the general discourse emphasis. This is particularly referred to attributes like "Healthy food", "Healthy diets", "Food safety", "Animal welfare" and "Obesity", whose rankings range from 4/10 to 10/10.

REFLECTIONS

Research outcomes highlight some specific aspects of the debate on food chain performances:

- Great emphasis has been given (in particular on mass media) to the link between food, territory and tradition. Food chains are often debated in terms of their possible contribution to local communities and cultural heritage survival.
- With regard to ecological performances, GHG emissions are extensively debated. The relevance given to this complex technical issue is quite surprising, and can be explained with the focus on local-global comparison, but also with the increasing public concerns for climate change trends.
- Information, in its various meanings (traceability, transparency, nutritional labeling), receives a predominant consideration across sources, with the assumption that information will increase consumers' awareness of the implications of their choices and it will lead to wiser consumption patterns.
- Experts ranked the highest two health-related attributes ("healthy food" and "food safety"), whereas "obesity", largely present in the media, was ranked as the least relevant.

In more general terms the survey revealed how the Italian debate reflects the cultural character food has in the national society.

A narrative focused on the territorial and social embeddedness of food and on the relation between food and cultural heritage (heralded by initiatives like Slow Food) is progressively gaining ground in the national imaginary strengthening a (sometimes implicit) bias for local and short chains.

A wave of re-peasantisation, though not occurring in reality at a significant scale, is feeding media communication and some procurement habits, particularly those of the middle urban class in search of authenticity and traditionality. The overall effect is a tendency to underline local food chains sustainability values, sometimes even "taken for granted", and a trend towards increasing demand for "genuine" food and a stronger consumers' involvement. A related outcome is a sort of "local washing" strategies that food industry is undertaking alongside the more frequently mentioned "green washing". Policies tend to encourage this process enabling farmers markets, allowing derogations for typical and traditional products, promoting origin denomination export, supporting biodiversity conservation initiatives.

Yet, the bulk of market and infrastructure interventions are not coherent to this vision and generally rely on a more techno-development approach. Similarly, modern lifestyles, distribution infrastructures, urbanisation, de facto and perceived pauperisation have in modern distribution channels their reference purchasing context, strengthening global food chain economy.

Local chains are generally regarded as fulfilling economic (in terms of farmers' income generation), environmental and social needs. Multifunctionality, in this respect, is no longer part of the current narrative around food and agriculture as much as it occurred in previous decades, but this does not mean a neglect, being now the multifunctional character of agriculture a sort of commonly accepted pre-condition for the farming activity and a crucial feature for its sustainability in the future. Multifunctionality is thus not seen as an element enabling the food chain performance assessment, but as a pre-condition for the economic sustainability of farms operating in the value chains

Technological innovation is another frequent feature which emerges vis-à-vis economic aspects like productivity, price competitiveness and in the "feeding the world" narrative, mainly referred to global food chains where it plays an instrumental role. It is also conducive to hygienic standard definition and compliance, potentially affecting competition in the food sector. GMOs proved to be a very lively issue for the national debate, across all spheres and dimensions: transgenic plants and foods are seen as a great threat or a big hope for the survival of Italian farmers and for a safe and sufficient food provision, in a very polarized confrontation. A counter-rhetoric is given by biodiversity and traditions which are a positively related pair upon which the Italian food system (reputation) was built and is sold worldwide, potentially threatened by the spread of GMOs.

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Brazilian Community-Supported Agriculture initiatives: a preliminary review

Nilson Antonio Modesto Arraes[1]

***Abstract* – This paper describe organization, production and distribution characteristics of brazilian CSA initiatives, using interviews and initiative website data. The characterization of the initiatives involved aspects of organization, production and distribution. The organization aspect sought to identify: the year of creation (legal and deliveries), legal form (informal, limited company, cooperative, association), existence of management council, risk sharing type (work, production, business), quantity and location of producers and consumers, and the estimated annual price of the quota. The production aspects intended to characterize the area (total production in CSA), the system (conventional, organic, biodynamic, certified) and the type of product (legumes, vegetables, fruits, spices and cereals). The distribution aspects searched were related to the place of delivery (producer, distribution point, consumer), the number of distribution points, the number of weekly deliveries and the diversity of items in the basket.**

***Keywords* – local food chain, urban and periurban agriculture, family farmers**

INTRODUCTION

The CSA – Community Supported Agriculture – is a local food system that has been disseminated in the United States, Japan and Europe for 30 years. Saltmarsh et al (2011) defined the CSA as "any food, energy or fiber production initiative, where the community shares the risks and rewards of production, whether through business, investment, share of production costs or as work supplier".

In Brazil there are no regulations on the CSA initiatives, neither a CSA development policy. The only legal aspect with regard to CSA initiatives is related to the brazilian system of organic conformity assessment - Law 10.831, December 23, 2003 and Decree 6.323, December 27, 2007 -, which provide social control mechanisms to firms that make direct sales, eliminating the certification by auditing (Niederle et al, 2013).

In 2014, at the initiative of people involved with CSA, especially Hermann Pohlmann, was created the CSA-Brazil an organization that promotes the creation of new CSA projects and also articulates and supports existing CSAs projects, forming a network across all projects (http://csabrasil.org).

The proliferation of CSA initiatives around the world and the lack of knowledge about its diffusion in Brazil were the main factors that justify this study. Hence, the main objective was to characterize the CSA initiatives in Brazil.

With the characterization of existing initiatives, we hope to subsidize consumers and producers that are interested in establishing new initiatives and public policy formulators and applicators oriented to the development of short marketing circuits and organic systems of production and trade.

METHODS

The CSA-Brazil website show 32 cities in Brazil with CSAs initiatives: 20 at the Sao Paulo State, 3 at Rio de Janeiro, 2 at Minas Gerais, 2 at Rio Grande do Sul and and Paraná States and 1 at Distrito Federal and Pernambuco State.

Among CSA initiatives, 5 of them were willing to participate in the interview, as follows:

- CSA-Demétria:
  Hermann Pohlmann (creator, manager and consumer);
- CSA-TocaCorumbataí:
  Richard Charity (creator and consumer);
- CSA-Campinas
  Mathias Vargas (producer);
- CSA-SãoCarlos:
  Dina Brito (producer);
- CSA-Vinhedo
  Gilberto (producer).

Apart from these five initiatives, information about the Rio de Janeiro and Belo Horizonte-CSAs were collected at their respective websites: http://www.clubeorganico.com and http://tinyurl.com/CSABHInfo.

The characterization of the initiatives covered aspects of organization, production and distribution. The featured items and their categories were adjusted during the first interviews.

The interviews were conducted between February and May 2015. After collected, the information was systematized in spreadsheet.

RESULTS AND DISCUSSION

Although brazilian CSA initiatives have been reported since the mid 1990s, all initiatives identified in this survey are recent; two are 4 years-old, five younger being one 1 year old or less. The report of Yamamoto (2006) on the ADAO initiative and promotion activities of CSA initiatives developed by its members seem to shape a "first wave" of the CSA in Brazil, while, from 2010 on began a "2nd wave" mainly promoted by CSA-Brazil, highlighting the role played by Hermann Pohlmann.

Most initiatives operate informally, although there is a charter and or a "contract" of compromise between the consumer and the management council. Even without legal registration, some initiatives seek to raise funds through projects with the collaboration of consumers and submit them through institutions that support them such as Instituto Elo, Veracidade e Associação Nossa Cidade.

The management council is the forum which includes producers and consumers. This council establishes the delivery commitments of producers and payment commitments of consumers, even if the principles crave for much more than that. Lack of management council in a CSA initiative set up by

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producers indicates fragile CSA's where there is not yet a critical mass of consumers who want to intensify the commitment to the producer and or a producer who prefers to take a larger share of the risk and possible gains.

The form of the predominant risk sharing is one in which consumers pay before production and then receive the results of production. There are several ways to sustain this commitment. Two CSA's began charging installments for 3 months before starting delivery. The CSA of São Carlos adopts a deposit that can be refunded to ensure the producer. Other two CSA's charge a membership fee with renewal every year. To the extent that confirms the commitment of a significant portion of consumers, or even that their renewal is permanent, parcels and values are regular, facilitating its financial management.

The only initiative in which risk sharing involved the work of some consumers was the São Carlos CSA. The presence of several universities, with students encouraged to participate and to grasp in practice takes place as food production, combined with the difficulty in hiring a labor force in the region to work in agriculture, contributed to the adoption of such risk sharing.

In larger cities of metropolitan areas, such as Rio de Janeiro, Belo Horizonte and Campinas, agricultural production unit and the producer are not in the same county of consumers. The sites are located in more remote municipalities, requiring production transport to the municipality of consumers. In smaller cities such as Botucatu and Itirapina, the producer meets consumers from other cities in order to achieve a minimum number of consumers that enable its exclusive dedication to the CSA.

The amount of basket quotas of each initiative varied widely - from 30 to 500 - expressing the degree of consolidation, since this indicates whether the producers can already keep, devoting himself exclusively to CSA. Although the number of quotas that enables this condition varies according to the administrative, production, distribution costs, composition and frequency of delivery of the baskets and the price charged to consumers, in interviews the number of shares sought by the initiatives that they might come this condition was achieved with 80 to 120 boxes. Thus, from the seven analyzed initiatives, in four the producer could remain only with the CSA.

Except for the Belo Horizonte CSA, others concentrate the supply of baskets to a single producer. Sometimes this producer can own enough area to meet all the demand and has permanent employees and / or partners, such as the São Carlos CSA- with five consumers participating in the production. Sometimes a CSA produces and coordinates the supply, adding its output to other producers, such as the CSA-Demetria, involving 14 people, including family members, employees and other producers.

The quota price for weekly basket with seven different items - vegetables, spices, fruits - at the time of the survey was between US$ 25 and 38. In the Rio de Janeiro CSA where the basket is composed of fifteen items, the price was US$ 80 with seven items considering the weekly nutritional needs of an adult, by including vegetables, fruits and spices. Thus, each consumer family, acquired a number of baskets, and consequently quotas, related to the number and ages of family members and their eating habits. The CSA-Demetria has 500 quota-basket, acquired for 300 families.

The area of production to meet the needs of the CSA has been up to 1 ha, considering 120 weekly quotas with 7 items. The adoption of techniques that aim to intensify production - greenhouses and irrigation - can expand the production capacity. The required production area allows that such initiatives can also be adopted in urban areas through urban agriculture programs. All production units are organic and / or biodynamic and, although not required, half of them are certified by audit. The vegetables (herbaceous) and vegetables (tuberous and fruit) - are the predominant products among producers. Fruit production requires longer-term investment, with little incentive, especially for producers who lease the land. Usually, fruits are complemented by other producers as well as eggs, milk, cereals, processed, and purchased by consumers also to complement the baskets.

The distribution has occurred in diverse ways. By taking the basket at the producer; at distribution points and from the delivery. Consumers close to the producer often choose to pick up the basket producer. The distribution points are aimed at minimizing logistics costs and their amount is related to the number of customers and their dispersion. Usually the distribution points are the homes of some con-sumers or businesses that support the idea and can benefit from the flow of consumers, as food stores or organic restaurants. The home delivering is made by charging a fee.

CONCLUSION

Brazilian CSA initiatives, compared to Europe, USA and Japan, are few. Of the 32 cities identified by the CSA-Brazil, seven were characterized in this study, representing 22% of this universe. Although it is not a representative sample, the results suggest that a "second wave" of creating CSA's is happening with various CSA initiatives being initiated.

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The challenges emerging from the new modes of governance around food

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***Abstract* – Health and sustainability concerns related to food production and consumption involve a multiplicity of actors and responsibilities. New models of interaction and decision making are increasingly experimented to fine-tune context-based solutions. These new forms of food governance develop along three types of relationships: civil society and the food chain; the public sector and the food chain; policy makers and civil society. The 7thFP Foodlinks project aimed at exploring new modalities of science-policycivil society interaction in the domain of sustainable food production and consumption. Looking at the experience across twelve European countries, the project deepened the specific innovative pathways undertaken along each of the three governance axes, by experimenting with Communities of Practice (CoP) as a dedicated space for interaction.**
Here we summaryze the challenges emerging from the interface between civil society and the food chain (the "Short Supply Chain CoP"). What changes do the new societal demands require to producers and production systems? What contribution from public policies and what institutional innovation could be useful to meet the new claims? Based on the case studies within the project, we discuss implications emerging about specific issues.
***Keywords* – short food chains, public procurement, urban food strategies, CoP, food governance**

INTRODUCTION

Health and sustainability concerns related to food production and consumption have come to the fore in the public opinion and in the scientific and political agendas. They involve a multiplicity of actors, fields of action and responsibilities and need the definition of new models of interaction and decision making in order to be tackled. As a potential response, in an increasing number of cases a "new food governance" is locally experimented, in which actors, other than public bodies and powerful corporations, have voice and innovative, context-based solutions, are finetuned to meet the new societal demands. These new forms of food governance develop along three types of relationships (Wiskerke, 2009): i) civil society and the chain of food provision (i.e. shorter food supply chains - SFSCs); ii) the public sector and the chain of food provision (i.e. public procurement - PP); iii) policy makers, especially at local level, and civil society (i.e. urban food strategies - UFS). In this context, civil society in particular is proving to play an active, significant role in promoting innovation.This rise of community action has been reassessed through the lens of grassroots innovation initiatives (Seyfang and Smith, 2007).

The 7thFP Foodlinks project aimed at exploring new modalities of science-policy-civil society interaction in the domain of sustainable food production and consumption. Looking at the experience across 12 European countries, the project deepened the specific innovative pathways undertaken along each of the three governance axes. To that end, the model of Community of Practice (Wenger, 2000) was adopted (CoP). Thepresent article aims at pointing out the challenges emerging from the "Short food supply chain" CoP,focusing on the role of members and organizations of the civil society and on the related demands. What changes do the new societal demands require to producers and production systems? What role andcontribution is required to public policies? What kind of institutional innovation could be useful to meet the new claims?

Based on the case-study analyses within the CoP,we discuss implications and instances emerging about specific issues. Results show how food is an integrative concept, which requires an innovative, reflexive approach at operational as well as policy level. In particular, it emerges the key role played by interaction and how challenging its support is.

METHODOLOGY

The Communities of Practice concept has gained wide influence both inside the academia and in the public and private sectors. CoPs are instrumental to encouraging social learning and supporting knowledge brokerage (KB) amongst researchers, policy makers and civil society organizations by facilitating their collaboration as a community. KB was conceptualised in Foodlinks as an interactive process of knowledge exchange, co-production and social learning between the different societal groups, that were so considered to be both knowledge producers and knowledge consumers. The process of KB, focused around the three mentioned themes, pursued a twofold aim: firstly, knowledge exchange and collaboration between the three categories of stakeholders and, secondly, a reflection on the effectiveness of the CoP as a space of interaction. The interaction within the CoPs was left to the initiative of participants, supported by facilitators, while two common tools were used by all CoPs: online platforms for virtual communication, useful for the internal interaction among members, but also for the enrolment of new members at European level; collaboration in writing a document aimed at representing the tangible output of the joint action.

RESULTS

Here we summarize the main questions and key issues raised by the participants in the SFSC CoP, and the main challenges encountered by producers and policy makers in relation to these questions. These challenges emerged as priorities identified by the different societal groups involved in the CoP and illustrated by a set of nineteen case studies across the twelve European countries involved (Galli and Brunori, 2013).

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1. What is "short"? The first question, from which the others follow, poses a radical challenge for producers to reflect on their own identity and the evolution of their role in market and society. Developing communication skills and engaging in networking activities re-define farmers' identity and activity. At the policy level, learning about existing practices on territory, successes and failures, may increase awareness on the importance of the phenomena.

2. What is the sustainability performance of shortchains? The sustainability assessment of short chains is complicated by the lack of a shared definition of "short", beyond geographical scale, and the absence of a shared methodology for the assessment. Environmental performance represents an exception but Life Cycle Assessments (LCAs) are often too costly for small scale producers. Investing in effective ways of monitoring and communicating the wider sustainability dimensions of products and processes (health, social and ethic) represents a challenge for short chains producers, taking into account scale and prevalence of relationships based on trust. On the policy side, building recognition of short chains into multiple policy areas (health,environment, rural development and agriculture) represents an opportunity to enhance the sustainability profile of short chains.

3. What role for regulation as a driver/barrier to short chains? The third question poses a challenge for policy in removing unnecessary hindrances, such as over-burdensome interpretations of hygiene regulations. This process may be facilitated whereas producers engage with public authorities and publicprivate partnerships are built.

4. What space for growth and how to manage up-scaling? Short chains develop as an alternative strategy or as diversification to complement a conventional marketing strategy. Therefore the challenge is to decide on the optimal organizational structure according to the different goals, stages of development and contexts. In some cases up-scaling is deliberately avoided, in order to maintain the specificity as short chains. On the other hand, often up-scaling strategies are sought through allies and agreements to maintain economic and social viability. The importance of aggregating supply is relevant when it comes to facilitating public procurement at local level, by linking local food systems and educational programs.

5*. How relevant are short chains in relation to public procurement and urban food strategies?* The recognition of the complex nature of food and foodrelated practices and of the multiplicity of pathways developing around them requires to increase knowledge on best practices and tailoring tools for sustainability assessment and monitoring to local conditions. Within the CoP, "short" has multiple and diversified meanings and "sustainable" much overlaps with "green". Placing local food on the policy agenda, especially at the urban level, is an important but demanding challenge, which requires to work on assuring the expression of the different interests and on building shared knowledge and goals.

CONCLUSIONS

The experiment conducted within the three CoPs emphasizes the importance of the new arenas of food governance as a space for implementingsocially demanded farming and, more in general,food provisioning. At the same time it also highlightsthe need for an adequate management of thesespaces for discussion and co-decision. In the specificcase of the selected CoP, the empirical materialshave allowed to explore the key priorities identified:short chain concept, sustainability assessment,regulatory issues and trade-off between growing andmaintaining the innovative character. Interactionamong farmers and between farmers and otheractors of the food system enables a constructivehandling of these priorities, so reacting to the newsocietal demands.

Knowledge brokerage and facilitation, tailored to context specific needs, are crucial to that end. However, the emerged different positions, interestsand perspectives of the actors involved, together with the variety of situations existing at local level, show the complexity of these processes and consequently how the related facilitation and negotiation practices are, although needed, not easy nor readily effective.

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WG19 - Food Security: Meanings, Practices and Policies

Food insecurity is increasingly "bimodal", encompassing issues of quantity and quality, under- and over-consumption, in developed and developing countries alike. At a time when most of the world's population lives in cities, food security has also assumed a strong urban dimension, raising new issues of physical and financial access to food. Finally, the recent emergence of a "New Food Equation", marked by food price hikes, dwindling natural resources, land grabbing activities, social unrest, and the effects of climate change, is bringing onto the global food security agenda a range of often interrelated sustainability concerns.

This working group aims to enhance understanding of this new global geography of food security and of the local responses to it. It will focus in particular on three questions: What innovative solutions have been devised to increase access to healthy food for the most vulnerable people? How can access to healthy food be balanced across different geographical scales? What type of policies and governance mechanisms are needed to reduce gaps in food access for the poorest?

We will welcome contributions on theory, practices and policies associated with food security in both developed and developing countries. From a theoretical perspective, we encourage analyses of the changing meanings of "food security" and the need for a refined research agenda that integrates a focus on food production (agriculture) with a consideration of increasingly complex issues of access to healthy food. From a policy and practice standpoint, we welcome empirical analyses of initiatives devised to combat food insecurity at the urban and regional level – where barriers to access become more tangible.

In this working group, priority will be given to contributions proposed around the following themes:

- *Constructing food security: contested meanings, innovative practices and key actors*
- *Food security and the reconfiguration of the spatial, socio-economic and environmental linkages between urban and rural areas*
- *Increasing access to healthy food across different scales*
- *The city challenge: urban strategies for food security*
- *Inclusiveness and reflexivity in food security governance*

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Discourse on food and nutrition security: media analyses in Flanders, Italy and UK

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***Abstract* – The public perception of Food and Nutrition Security (FNS) in Europe is shaped by insights and believes on the drivers and vulnerabilities of the food system performance and its resilience. This paper presents a cross-country analyses of FNS discourses in Flanders, Italy and UK. The research is based on media analyses in these countries, in the period 2007-2014. We focus on eight discourses: the ecological discourse, the free trade discourse, the quality discourse, the social discourse, the solidarity discourse, the sovereignty discourse, the technology discourse and the wholesomeness discourse. This research contributes in countering the regressive fragmentation and aggregation currently framing conventional FNS approaches.**

***Keywords*: FNS, discourses, media**

INTRODUCTION

The public perception of Food and Nutrition Security (FNS) in Europe is shaped by insights and believes on the drivers and vulnerabilities of the food system performance and its resilience. Over the past two decades, various narratives on Food and Nutrition Security (FNS) have been developed. A narratives takes specific vulnerabilities and hazards in the food system as point of departure for shaping potential solutions. Narratives are also present in the social media, influencing public perception and solutions, and leading to various discourses that encompass these views on reality. Recently, there is a growing body of work on FNS framings that aim to gain an in-depth understanding of narrative formation and its policy implications.

Along with time, the focus has been enlarged from a narrow system/production-centred approach to a more encompassing people/access-centred approach, and the focus of analysis, also for measurement purposes, there has been as shift from 'food security' to 'food insecurity'. The scientific and politic debate on the definitions addresses these two aspects, scale and dimensions of food security. Scale thereby refers to the level of analyses. In this context, one can observe a shift in interest from the international and national level towards food and nutrition security at the level of communities and even at the household level. In terms of dimensions, the current official definition highlights four aspects of FNS: availability, access, utilization and stability.

In a European context anno 2015, several general questions can thereby be put forward. What are the dominating food and nutrition security discourses? To what extent do this discourses effectively differ from one another? What organizations use these discourses to set their goals and formulate solutions for current problems in the food system?

INTERPRETING FOOD AND NUTRITION SECURITY DISCOURSES

Discourses can be considered as external structures used by individuals, groups, and societies in order to organize, perceive, shape and communicate about reality. Despite the multifaceted processes and the complexity that characterizes the FNS dynamics, solutions and conceptualizations - envisaged from policy, academic spheres and lobby groups – they have mostly revolved around oppositional narratives that reproduce old dichotomies and dialectics. These narratives have been identified under different flags such as the productivity (or efficiency) narrative and the sufficiency narrative (Freibauer et al. 2011; Huber 2000), or the bio-economy and eco-economy paradigms (Kitchen & Marsden 2009), weak and strong ecological modernization (Horlings & Marsden 2011) , or productivist or demand-led approaches (Sonnino et al. 2014).

For this research, we build on Mooney and Hunt (2009) who applied the framing concept for identifying agrarian ideologies that constitute the fabric and social protest in American agriculture. Furthermore we rely on the work of Candel et al. (2014), who analyzed food security discourses deployed in the CAP post-2013 reform process. In line with their findings, we focus on eight discourses: the ecological discourse, the free trade discourse, the quality discourse, the social discourse, the solidarity discourse, the sovereignty discourse, the technology discourse and the wholesomeness discourse.

METHODOLOGY

The research is based on media analyses in Flanders, Italy and UK which allows region specific as well as cross-regional comparison of discourses. The data was sourced from three spheres: public media, policy documents and scientific literature. Table 1 provides an overview of the sampling size in the three regions considered. The analysis was carried out using Nvivo software. Word frequency analysis and text search analysis were applied to analyse the selected media.

Table 1. Sample size for the media analysis

Source	Flanders	Italy	UK
Public media	1341	244	475
Policy documents	12	63	8
Scientific literature	35	26	10

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RESULTS

The analysis showed three key results.

First, the analysis demonstrates how a limited number of organizations – including NGOs, sector organizations, political parties and scientists – frame the regional debate on FNS. This holds true for all three regions included in the analysis and explains differences in FNS discourses across regions as well as the shift in power of discourses over time. As an example, we refer to the initiatives of Tristram Stuart in the framework of Feeding the 5000. Related events have enriched the ecological discourse, the social discourse and the solidarity discourse. In the UK, the food sovereignty discourse is not in the press however, there is a strong debate on food poverty and the role of food banks as an important device to develop narratives.

Second, we identified a consent need to enforce the revival of local food systems. This common belief is found in several discourses: the ecological discourse, the quality discourse, the social discourse, the solidarity discourse and the sovereignty discourse. The results for Flanders and Italy are in line with the findings of Brunori et al. (2013), who stated that new alliances around waste, resources, sustainable diets and food sovereignty are being formed. In the UK, however, there is more a disconnection from local, ecological, community initiatives and national and international policies and discourses. Local initiatives are largely by-passed absent in the main media.

Third, we observe important conflicting views on FNS with opponents of production increase heavily relying on biotechnology and promoting free trade versus discourses that emphasize the need for behavioural change in food production and consumption. The former view basically covers the free trade discourse and the technology discourse, which could be considered as the dominant discourse. The alternative view articulate a serious concern with respect to genetic engineering as a whole and the power of multinational biotechnology companies in particular. A deeper investigation on the underlying moralities might unblock current polarization.

CONCLUDING REMARKS

This research contributes in countering the regressive fragmentation and aggregation currently framing conventional approaches to FNS. Focusing on public media, instead of policy documents, the research also encompasses discourses that are not at all or hardly taken up by policy makers. The results confirm the relationship between scale and framing (Kirwan & Maye 2013) with a dominant discourse focusing at the globalised food systems and various alternative discourses taking local food systems as a point of departure. In this context, the cross country analysis allows to gain insights in the geographical dimension and regional embeddedness of FNS discourses. A thorough understanding in discourses and the underlying arguments contributes to the public debate on FNS in general and the debate between proponent of - apparently - competing discourses in particular.

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Quality, Technology, Sovereignty. Discourses on Food Security in Italy

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***Abstract* – Food insecurity remains a concern in Italy and nutritional issues are still in the governance agenda mainly in relation to unbalanced diets and incorrect lifestyles. After the food price spikes in 2007/08, and in consequence of the economic crisis, food poverty and access to food have gained new evidence on the Italian media. The paper describes the results of an analysis conducted in the Italian media in the years 2007-2014 aiming at identifying discourses and frames shaping the debate on food and nutrition security (FNS).**

More than 300 articles, papers and documents have been analyzed through the identification of key-words and a more general textual analysis. The scrutiny led to the identification of eight discourses characterized by specific priorities, key themes, suggested solutions, rhetoric: Ecological, Free trade, Quality, Social, Solidarity, Sovereignty, Technology, Wholesomeness. These discourses have been then analysed in a comparative approach to identify the main frames shaping the debate on FNS in Italy: a "regional sustainability" and a "global efficiency" frame.

***Keywords* – Food and nutrition security, Food systems, Frame analysis.**

INTRODUCTION

Food and nutrition security (FNS) is still a concern for European countries and a matter of debate in the public media space. The effects of economic crisis, the impacts of migrants flows, the increasing concerns for food safety issues are even strengthening the presence of food security related issues on the media and their relevance on policy agendas. This paper (originated from the EU-funded project Transmango - Assessment of the impact of drivers of change on Europe's food and nutrition security) explores the ways in which FNS is discussed in Italy through the identification of the main discourses around which the debate develops, and of the main frames that actually shape the debate itself.

Frames are dynamic and evolving constructs, resulting from complex acts of communication occurring in various spheres of the public debate. They result as outcomes of a "framing process" (Candel et al. 2014), in which aspects of a perceived reality are highlighted emphasizing "a particular problem definition, causal interpretation, moral evaluation, and/ or treatment recommendation for the item described''. Within each frame specific problems are identified, described and prioritized; causal relations are argued; possible solutions are suggested, rejected or even ignored. Moreover, framing processes are often contentious, as they have to face different frames promoted, explicitly or not, by other actors. These coexisting frames can be merely different but also in explicit opposition to each other (Benford et al., 2000; Kirwan et al., 2013).

Through an analysis conducted on the Italian media, we identified eight discourses on FNS each of them focused on specific priorities and related solutions. The discourses have been analysed in a comparative perspective to highlight the main frames that seem to polarize the discussion, representing different values, perspectives and constituencies.

METHODS

The analysis has been conducted on sources chosen according their relevance in the public, policy and scientific domains. Public sources were intentionally dominant to reflect how FNS is mostly perceived in the country. TV programs, newspapers, magazines and websites were scrutinized accordingly. Policy sources were mainly studied from documents available on the web and after a subjective selection of those most influential in Italy or having a specific institutional mandate on FNS matters. Scientific papers were browsed on the scientific literature and through research engines. More than 300 media articles, policy documents and scientific papers have been scrutinised and utilised for the analysis.

Selected texts were then analysed through a coding process based on the identification of key-words and on their aggregation into more general and abstract categories that were then clustered and used to identify discourses and frames.

RESULTS

The scrutiny led to the identification of eight discourses characterized by specific priorities, key themes, key actors, suggested solutions, rhetorical devices. They are listed as follows, together with a brief description of the positions they represent:

- Ecological - Ecological factors like climate change, pollution and soil erosion represent the main threat to FNS;
- Free Trade - Food industry inputs and food products should circulate freely to profit of comparative advantages and reduce food prices;
- Quality - Preservation and valorization of the link between food production, territories, and cultural traditions can strengthen FNS;
- Social - FNS results from socio-economic inequalities and social marginalization more than food system mechanisms;
- Solidarity - There are individuals, households and groups in need of food aid who must be helped though specific aid and assistance programs;
- Sovereignty - Local/regional communities have the right to hold control over their food systems, and this will reduce food insecurity and vulnerability;

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- Technology - People must have confidence in technology adoption in the food sector to improve production efficiency and food safety;
- Wholesomeness - FNS is mainly a matter of food safety and of personal consumption choices.

The subsequent step of the research (conducted also through the comparative analysis of the keywords that characterise each discourse) led to the identification of two main frames in which the eight discourses can be aggregated, or (if we regard the process form the opposite perspective) that "enrol" themes, priorities and rhetorical devices characterizing the specific discourses within a broader vision.

The results are shown in Fig.1. Two main frames emerge, plus an additional frame more solution-focused, which gathers two discourses (the Social and the Solidarity ones) for which FNS is regarded mainly in terms of food poverty.

The two main frames are: i) "Regional sustainability" (stronger in the media and increasingly able to influence policies) supported by the Sovereignty, the Quality and the Ecology discourses; ii) "Global efficiency", supported by the Technology and the Free trade discourses, with a minor presence in the media (yet often taken for granted in articles where they are not explicitly argued), but more consistent with the dominant food industry paradigms.

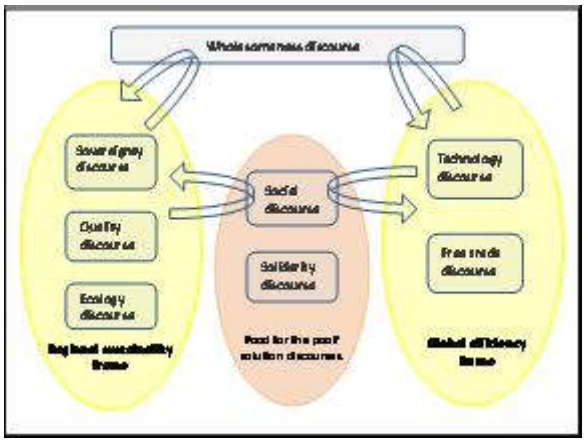

Figure 1. Discourses and frames

Figure 1 also evidences (through the curved arrows) how within the two main frames themes and keywords characterizing discourses other than the ones those frames represent are often utilised. This happens by attaching different meanings to the same keywords or by "enrolling" them to support their positions and solutions. For example some issues traditionally raised within the Ecology discourse are adopted in the Technology one, with the claim that in an over-populated world GMOs and other biotechnologies can prevent soil consumption, biodiversity loss, use of chemicals. Similarly, GMOs and biotech are said to support traditional Italian products survival, a cornerstone of the Quality discourse.

Social and poverty-related themes are used to support Free trade positions when it is argued that free trade reduces food prices and opens market opportunities for quality products, but are also integrated into a Quality discourse in the aim to reconcile quality and local productions with workers life conditions

REFLECTIONS

The applied methodology gives some interesting insights into the way in which frames are constructed and interact with each other, as frames have been identified through the analysis of eight more specific discourses, that constitute or "feed" those frames. This allows to "unpack" the content of each frame and to analyze the narratives these frames are built upon.

In a recent paper Brunori et al. (2013) identify the emergence in Italy of a "new food consensus" linking together features of the previous "Made in Italy consensus" with social and sovereignty issues emerged in reaction to the recent economic crisis.

This analysis has been partially confirmed and integrated as well as grounded in a text-based survey aimed at the identification of the specific discourses in which this frame can be articulated.

Our analysis confirms the presence of a frame, dominant in the media, based on a concept of quality grounded on the links with regional traditions, cultural heritage, artisanal skills and local communities, whose advocates also try to adopt themes characterizing discourses on social fairness and ecological sustainability. At the same time the research underlines the presence of an opposite frame that, although less often and less explicitly argued, reflects positions, policy approaches and practices characterising large part of the food industry.

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Food security challenges and responses: A comparative analysis of Latvia and Lithuania

T. Tisenkopfs, M. Grivins, I. Kunda, S. Šūmane[1]

***Abstract* – In this paper we compare food and nutrition security (FNS) challenges and responses in Latvia and Lithuania by addressing the research questions: what are the food system drivers and vulnerabilities, who are the vulnerable groups, how FNS is framed in public debate and how pathways towards sustainable food security are developing? We focus on the dimensions of food access and consumption and take into consideration structural, cultural and political context of food systems. Key drivers and vulnerabilities in the Latvian and Lithuanian food systems are described and 8 frames in FNS debate highlighted. Responses to food (in)securities are conceptualised as framings that form background for actor coalition building and particular pathways towards improved food and nutrition security. In particular we discuss school meals as one of the pathways towards sustainable FNS. We conclude that FNS pathways are influenced by interpretative frames, political ideas, and cultural factors and implemented through building coalitions among food system actors and undertaking civic, governmental and mixed initiatives. The paper is a part of EU TRANSMANGO research and is based on documentary analysis, media study and expert interviews.**

***Keywords* – Food and nutrition security, food system, drivers, vulnerabilities, frames, pathways.**

INTRODUCTION

Food and nutrition security (FNS) is defined as a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO 2002). FNS is an outcome of the food system (production, distribution, consumption processes and assets and regulative institutions) performance and its ability to correspond the contextual challenges. FNS has four dimensions: availability, access, utilisation and stability and control. *"The vulnerability of the food system is he capacity of the actors, activities and processes to react to hazards, deal with them and deliver food security and other critical environmental and social outcomes of food system, whereas drivers are understood as root causes, dynamic pressures, and hazards (i.e. shocks and stresses), that create food system vulnerability"* (Brunori et al 2014, 31). Food systems in Latvia and Lithuania during the last two decades have been influenced by the processes of globalisation, EU integration and technological modernisation of production with *controversial effects on food and nutrition security*. Availability and access to varied food have increased, although food poverty for some groups remains high. In both countries consumption habits are massively shaped by supply in supermarkets and the capitalist workday requirements. Global trade, retail concentration and the power of marketing make cheap and often low quality food widely accessible and the spread of unhealthy food habits is a reflective mirror of abundance. At a time when global drivers and profit motives dominate the food system and captivate consumer minds a question arises how different actors can break away from *unhealthy* dependencies in the food system and create space for more agency and responsibility? What reasonable responses and pathways to sus-tainable FNS and respective governance arrange-ments are emerging?

METHODOLOGY

Research is based on documentary analysis, review of statistical sources and analysis of media texts (print and online newspapers, magazines, social media, policy documents, scientific papers, industry publications) regarding food security issues. In total 146 Latvian and 96 Lithuanian texts were analysed. In addition 6 expert interviews were conducted in Latvia and 8 in Lithuania. The methods of data analysis included: quantitative and qualitative content analysis, discourse analysis, frame analysis, comparison and synthesis. The findings of media analysis were consulted with food system stake-holders.

FOOD SYSTEM CHARACTERISTICS

Structures: Food systems in both countries have similarities as well as differences. The similar characteristics are: a large segment of small farms; a tradition of self-provisioning and informal food networks; wide political support to intensification of agriculture; the importance of food industry in the national economy and export; self-sufficiency in food in some production branches; household food expenditure among the highest in the EU; a tendency to deny food poverty at political level. The governance of food systems is divided between the production side (agriculture, food industry) and the con-sumption side (health, social policies), with emerging interlinkages. There are also differences: the Lithuanian food companies are much bigger and export oriented. A slightly bigger market, higher support to technologies, more productive agricultural land, and some cultural peculiarities have led to a higher centralization and paternalization in food systems in Lithuania. Latvia in turn demonstrates a greater variety of interpretations of food systems and alternative chains, which can be attributed to a more active civil society.

Drivers:In both countries global and local food system drivers' co-existence and interface with some nuances. In Latvia the food system experiences twofold influences: by global factors clustering around international trade, climate change and technological modernisation, while the local forces group around

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local food initiatives, food self-provisioning, urban food initiatives and public sector food procurement. In Lithuania the global drivers (global retail, intensification and concentration of production, predominance of profit concerns) are closely intertwined with Lithuanian pride in their agri-food sector and the quality of products.

Vulnerabilities: FNS vulnerabilities in both countries are significantly influenced by poverty and inequality and changes in consumption habits.One common theme of vulnerabilities are imbalanced power relations in food chain, notably power concentration in retail (Latvia), and retail and large food enterprises (Lithuania) which weakens local producers. Another area of vulnerability is consumer habits / unhealthy choices (the young generation being the main concern) associated with lack of knowledge, power of marketing and over-technologisation of food production. Some vulnerabilities derive from inadequate government regulation, political errors and the weakness of civic society leading to weakened civic food activism (Lithuania).

Insecure groups: The notable risk groups who suffer from food insecurityin both countries are:low income people, the unemployed, homeless people, elderly population, single parents, large families and women (particularly single mothers).

FNS FRAMING

Frames are interpretative lens for understanding a social situation and projecting an action. Frames manifest as actor discourses and include metaphors, objects of critique and rhetoric devices in order to create meaning. The analysis of public sources revealed 8 relevant frames of FNS being discussed and interpreted in Latvia and Lithuania. These frames can be structured into three groups – those addressing food distribution (Food sovereignty and Productivism), those addressing consumption practices (Solidarity with those in hardship, Livelihood, and Poverty is laziness) and those addressing relations to global markets and food system governance (Food democracy and food citizenship, Healthy food habits as individual responsibility, and Healthy food habits as system/environmental responsibility). In both countries the frames are quite similar with the exception that in Lithuania there is a strong predominance of Productivism and considerably weaker forms of Food democracy and food citizenship. Poverty is Laziness is a common frame in both countries and it claims that solving food insecurity problems is individual responsibility which individuals fail to exercise due to moral failings.

DISCUSSION: RESPONSES AND PATHWAYS

Frames dealing with *food system governance and addressing the challenges of global markets* are particularly relevant for developing sustainable FNS pathways. In this regard it is important to understand how the frames Food democracy and food citizenship, Healthy food habits as individual responsibility and as system/environmental responsibility are constructed. Healthy food habits as individual responsibility stresses the importance of consumption directed towards the *self*; consumption is part of the market and thus – one should be responsible of his/her choices. The frame Healthy food habits as system/environmental responsibility relates un-healthy food habits to non-actions or actions taken on systemic level (the food industry, government), i.e. places the responsibility on policy and industry level. Food democracy and food citizenship is a supportive frame to build coalitions and form the response to the question: who should be responsible for healthy consumption – individual or the system?

Comparison reveals that there is a tendency to place that responsibility for food choices on the shoulders of consumers and experts, the supermarket and food industry offer being criticised but taken for granted. The food system in both countries is also driven by local forces (short chains, localised production, etc.) however these forms of alternative food supply cannot counterbalance the ambivalent influences of global forces on the outcomes of FNS (Tisenkopfs et al 2015). One of the central areas where new approaches (and values) towards sustainable FNS are sought in Latvia and Lithuania is school meals. School meal initiatives reflect a combination of frames: individual and system responsibility, food democracy and citizenship, solidarity with those in hardship. They bring together national, municipal, organisational and individual level stakeholders and try out new governance solutions for sustainable food provisioning.

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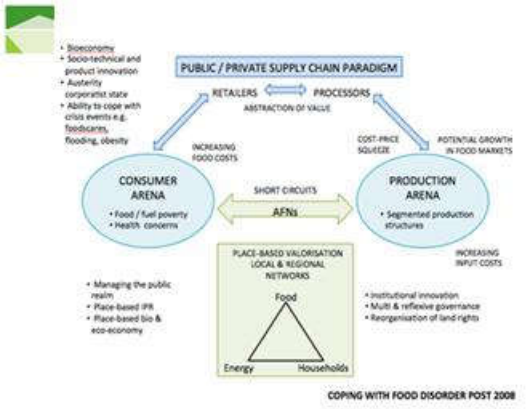
Corporate Food Governance, Financialisation and the Reproduction of Food Security Vulnerabilities

Terry Marsden, Ana Moragues Faus, Roberta Sonnino[1]

***Abstract* – The paper will attempt to empirically and conceptually trace the changing nature of corporate food governance and financialisation in the UK and Europe, especially since the food, financial and fiscal crisis emerged from 2007-8. The emphasis will be on the exogenous and endogenous vulnerabilities that are currently being exposed. It will also question the degree to which new landscape pressures built around the new ecological and political vulnerabilities associated with centralised and privatised systems of supply chain control and the onset of 'stranded assets' will provide new spaces of possibility for more sustainable and distributed systems of food governance to take hold.**
***Keywords* – food governance, vulnerability, financialisation, food security.**



CHANGING FOOD GOVERNANCE IN THE UK (SINCE THE 2007-8 CRASH)

The food, financial and resulting fiscal crisis emerging from 2007-8 has led to a rejuvenation and reproduction of a series of interconnected food vulnerabilities. The diagram below attempts to summarise the systemic connections between the production and consumption arena in the food system over recent years. In this paper we wish to concentrate upon an analysis of these expressions with regard to the dominant corporate private-interest model of food governance (represented in the upper sections of the diagram below). We have documented for some time in the 2000s the complex nature of this system of food governance both in the UK and in Europe more generally (see Marsden et. al., 2010), and more recently it has become linked more generally to the crisis tendencies associated with overall neo-liberal regulation (see Wolf and Bonanno, 2014; Busch, 2014.).

The food system is a central subset of these new set of contingencies, and it is one which now more, as we shall delineate in this paper openly displays these contradictions and vulnerabilities to such an extent that it reduces the overall legitimacy of the regulatory system as a whole. In this sense we agree with Hall and Massey (2010: 57) when they argue for a post-neoliberal state whereby: 'history moves from one conjuncture to another rather than being an evolutionary flow. And what drives it forward is usually a crisis…Crises are moments of potential change, but the nature of their resolution is not given'.

It is important therefore to see the current neo-liberal dominated conjuncture as a more highly contested and contingent process, very much along the lines that Harriet Friedman depicted in her espousal of panarchical contested transitions in the recent seminar in Cardiff (November , 2014). Under these conditions we can expect new tendencies and countertendencies in food nutritional and provision systems (FNS) both operating in parallel times and spaces. For instance, as we shall depict we can see the continued intensification of production and supply of food at the same time as a growth in alterna-tive assemblages is occurring as very much a reaction to these trends. What thus seem clear, and the UK governance seeks particularly prone to this, is a lack of coherence and proactivity on the part of the state to act (and especially intervene) in and on behalf of the wider public interest, over and above its private interest obligations to corporate private food interests. The diagram below depicts these panarchical sets of relationships. These currently and interestingly tend to devalorise significant groups of consumers and producers, such that value is continually abstracted from both in the dominant private-interest model. This is more evident today than it was a decade ago when we were writing about the dominant private-interest food governance model. Then, before the multiple crises, that model could rely upon a fairly stable procurement of food materials from around the world at a relatively cheap and externalised cost. At the same time general levels of economic growth and state welfare spending also tended to uphold the effective demand and consumption of food goods more the majority of the low income population.

These conditions have now significantly changed. Marsden and Morley (2014) have recently pointed out with conjuncture of resource depletions on the one hand and the continued withdrawal of state welfare nets on the other. As we shall see below this combination of circumstances, together with the

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upholding of a neo-liberal corporate food system has led to the reproduction of a new set of food security vulnerabilities. At the same time it has also further stimulated the corporate controlled financialisation of key aspects of the food system as scarcities have led to speculative financial investments in land and key natural resources. Ne reaction to the crisis has thus been to continue to shift financial resources to resource based 'safe-havens', further reducing social and public good investments in reducing vulnerabilities and inequalities.This document is a template for Microsoft Word versions 6.0 or later. If you are reading a paper version of this document, remind you can find the template'selectronic file attached at the email sent to all authors whose abstract have been accepted, so you can use it to prepare your manuscript.

METHODOLOGY AND SOURCES OF EVIDENCE

This paper is based on the data gathered and results of our participation in the European Project TRANSMANGO *Assessment of the impact of the global drivers of change on Europe's food security*. One of the tasks in this project consisted of analysing statistical data and trends of Food and Nutrition Security. Furthermore, this data was complemented with a media analysis which led to identify 17 system vulnerabilities. The description of these vulnerabilities was enriched by the analysis of discourses, that is, how these different vulnerabilities are perceived and communicated in the media. These data can be consulted in Moragues-Faus et al., (2015).

ENACTING RESILIENCE AND MANAGING VULNERABILITY

There are three main concepts that are key to progress in Food and Nutrition Security debates, specifically in terms of managing food system vulnerabilities as described below.

(i) *The public legitimacy and reflexive governance test*: As we see from the above analysis, the agri-food regulatory system is coming under renewed and more intense pressure for a combination of exogenous and endogenous forces and drivers. Perhaps most important of all is the decline in its overall political and social legitimacy. As Garnett and Godfray (2012:49) have argued: ' a system of food production that is socially or ethically unacceptable to a large fraction of the population will lack 'continuability', or resilience, however ecologically attuned it may be'. There is then a need to ensure that effective and more reflexive governance systems ensure more effective food security strategies which, in turn facilitate and indeed legitimise a convergence of technical, ecological, social and political interests around sets of collective goals.

(ii) The sustainable infrastructure test: There is need to substantially renew and reformulate the missing middle in the food system (Sonnino et al., 2014). This includes new sets of physical and virtual hubs, as well as more sustainable financial mechanisms (overcoming the problems of 'stranded assets') by embracing renewable sources of energy and food within a more diversified and distributed bio/eco-economical terrain.

(iii) The ecological and metabolic test: It is paramount to create spaces and places for bringing together sustainable production and consumption platforms between rural and urban places, and between different socio-economic groups, so as begin to reduce the widening spatial and social disparities in food access and sovereignty.

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The Role Of Food Assistance In High Income Countries: A Critical Literature Review

Arcuri S., Galli F., Brunori G., Bartolini F.[1]

***Abstract* – The recent financial crisis, in conjunction with austerity policies, has brought an increasing number of people to seek food assistance. Food assistance is often delegated by governments to charitable organizations and food poverty is in general peripheral to the work of policy makers. There is need for an enhanced understanding of food poverty in HIC to rebalance the interaction between charity initiatives and the aid provided by the State through the welfare system. What are the main drivers and vulnerabilities of food assistance? To what extent should food assistance be addressed with social protection measures and economic policies, or by looking into the specificities of the food system? We review available scientific literature on food assistance in HIC to characterize how it is handled and by which actors. This allows to analyse the role of food assistance in addressing food insecurity, by highlighting food assistance activities in relation to the food system and/or other systems (e.g. social security, labor, health) facing external factors of change (drivers).**

***Keywords* – food assistance; charity; welfare system; High Income Countries.**

INTRODUCTION

"Food poverty" is defined as the "inability to acquire or consume an adequate quality or quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so" (Riches, 2002). The term is commonly used as a synonym for "food insecurity". Since food availability is not a real problem in High Income Countries (HIC), food insecurity is firstly addressed as a matter of income inadequacy (Riches, Silvasti, 2014).

The recent financial crisis, in conjunction with austerity policies, has brought an increasing number of people to seek food assistance (Lambie-Mumford, Dowler, 2015; Caraher, Cavicchi, 2014). The profile of individuals in need has also changed, more and more including the "new poor" (Dowler, O'Connor, 2012), struggling every day with low wages, unemployment or insecure jobs and rising costs of living. Thus, when other demands, such as rent and utility bills, are pressing, food expenditure is compressed.

These conditions have steered an increasing effort by charitable organizations in the absence of a clear response by governments. For example in the US, despite the large federal expenditure on food assistance, the effort of a relatively small amount of private charity tends to prevail in the nation's consciousness (Poppendieck, 2014). Or in Italy, where a large part of food assistance is managed by the non-profit sector and social enterprises based on volunteer work, with donations from the productive and commercial system to the European public subsidies to the most deprived. This necessary intersection between the private initiative and the public sphere can be explained by the partial failure of policies in engaging into a relationship with the most vulnerable actors.

Responsive policies are hindered by the lack of a universally agreed definition of the problem. Food poverty is in general peripheral to the work of most policy makers, although they are aware that many of their actions could have impacts on food poverty, both positively and negatively. There is need for an enhanced understanding of food poverty in HIC to rebalance the interaction between charity initiatives and the aid provided by the State through the welfare system.

This paper aims to answer the following questions: How does food assistance develop in HIC? What are the main drivers and vulnerabilities of food assistance? To what extent should food assistance be addressed with social protection measures and economic policies, or by looking into the specificities of the food system?

METHODS

We reviewed the scientific literature on food assistance in HIC to characterize how it is handled in the different countries and by which actors. This allows to analyse the role of food assistance in addressing food insecurity, by highlighting food assistance activities in relation to the food system and/or other systems (e.g. social security, labor, health) facing external factors of change (drivers) (Figure1).

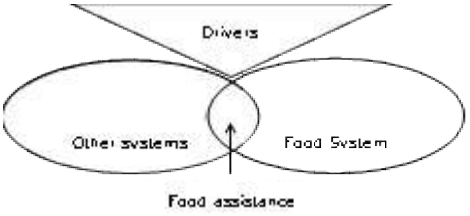

Figure 1. Drivers and solutions of food poverty. Source: adapted from Brunori et al. (2015).

A keyword research on Scopus has been made, using as search terms "food assistance" (AND) "food security" (OR) "charity" (OR) "welfare". The search has been limited to the disciplines of social science and humanities and resulted at first in 481 hits. Further refinements have been made, in order to select those results pertaining to HIC. We obtained 206 results, that have been subsequently screened for their relevance, according to the question "does the article explicitly refer to food assistance programs or initiatives undertaken in HIC by the State or by charities?". We complemented the search with additional literature selected through Google Scholar. Eighty papers were chosen for the review. The time frame ranges from 1977 to July 2015. The main

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geographic areas of reference are USA, followed by Europe, Canada and Australia.

Table 1. Number of papers reviewed per subject and geographic area of reference.

Area	Charity	Welfare	Both	Total
Australia	3	-	-	3
Canada	8	-	-	8
Europe	14	3	-	17
HIC	1	-	-	1
USA	7	33	9	49
NS	-	2	-	2
Total	33	38	9	80

[a]NS means Not Specified, not explicitly referred to a precise geographic area by the authors.

RESULTS AND DISCUSSION

The papers we analysed variously discuss the topic of food assistance. Although country-specific differences must be accounted for, a set of cross cutting issues emerges. Firstly, the increasing number of those demanding for food aid is linked not to a food emergency in the strict sense, but to an economic emergency. Secondly, there is a continuum between welfare and charity initiatives, as food assistance lies at a midpoint between welfare and the food system. Prime example is the case of European Union, where the Food Distribution programme for the Most Deprived Persons (MDP) was embedded into CAP and delivered food from intervention stocks to member states until 2013. From 2014 on, the new Fund for European Aid to the Most Deprived (FEAD) is intended as social policy. In both cases, although there is a coordination at a national government level, charitable organizations represent the last link in the chain that distribute food to the needy. In the USA, the SNAP (Supplemental Nutrition Assistance Program, former Food Stamps) is managed by the US Department of Agriculture and administered by local welfare offices: food assistance is intended as a social protection measure, providing financial assistance for food purchase to low-income households.

By exploring relevant literature on food assistance, we have identified four main narratives around which the discourse on food assistance revolves: 1) charity, analysed with respect to stigmatization, control over donations, nutritional aspects, emergency relief and philanthropy; 2) surplus food recovery, that is strictly related with food banks' activities and combines objectives of reducing hunger and food waste; 3) welfare, whose safety net is more and more reshaped by budget cuts and decreasing levels of provision; 4) right to food, alternative to the gift approach and based on social justice and political and legal commitment by the State.

CONCLUSION

Food insecurity and inadequate diet are central to the experience of poverty. However, food and nutrition security is not always addressed in the policy discussions The hybridization between welfare and charitable system reveals the in-adequacy of social protection measures in covering the basic needs and charitable food programs attempt to supplement its shortcomings. However, food charities are not intended, by design, to fully meet clients' needs, but only to provide a temporary relief. In fact, they are dependent on unpredictable levels of supply and can't assure the nutritional quality of food. Furthermore the stigmatizing nature of food charity makes it the last option, so much that food banks statistics are likely to provide an underestimate of food insecurity. Shortcomings of food assistance, both led by charitable organizations and governments, call for an increased understanding of the drivers and vulnerabilities of food poverty and how it is handled in HIC.

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Urban Agriculture in Tanzania and Sustainable Urban Food and Nutritional Security

Robert Mhamba[1]

Abstract **- In the academic literature scholars have underlined that urban food systems are emerging as important (but still under-researched) units of analysis for sustainable food security in the 21st century. In this paper we develop a mixed method for understanding food and nutritional security (FNS) sustainability in urban areas in countries like Tanzania. With increasing urbanization, decreasing agricultural productivity in rural areas and persistent food poverty in Tanzania, we seek to understand what is the existing linkage between urban agriculture and Food and Nutritional Security (FNS) in urban areas, particular in the sub-Saharan Africa context. In particular we seek to shade light on what is the connection and disconnection between urban food production and consumption. In what way does the connection and disconnection impact on urban food and nutritional security?**

We carryout our analysis using the systemic approach lens, through which, FNS is analyzed structurally and systemically. The approach, which is currently gaining growing attention in the academic literature, takes into account sustainability concerns as well as issues of production-based (productivist approach) and consumption-based (demand or access based approach).

Keywords **- Urban Agriculture, Food and nutritional security, Economic structural transformation and Urbanization**

INTRODUCTION

Urbanization is growing fast in Tanzania in the past two decades as a result of high influx of rural to urban migration, birth rates and rapid growth of numerous small towns and trading centers mainly along trunk roads i.e. the cities of tomorrow. According to the national census, the urban population was 13.3% in 1978, 17.9% in 1988, 23.1% in 2002 and 29.1% in 2012 - 29.1%. The urban population is estimated to be 31.8% in 2020 and 50% by 2050. By 2013, Tanzania had 5 major cities, 18 Municipalities, 14 Town Councils, 48 Township Authorities and about 98 emerging small towns[2].

MAIN FINDINGS

The importance of urban agriculture in Tanzania is driven by the weak nature of economic transformation from a low productivity agrarian economic structure, into a high productivity and diversified economic structure. Falling agricultural productivity and limited specialization and development of urban-based industries to support the growing urbanization, characterize the 21st Century Tanzanian economy. The large majority of the active population in urban areas is employed in agriculture (7.3% in Dar es Salaam, the commercial capital and 58.2% in other urban areas). Manufacturing industries employ 11.5% in Dar es Salaam and only 3.8% in the other urban areas.

The nature of foods produced corresponds to the type of foods consumed within the urban areas. Specialization takes place in the production of vegetables, poultry products and pork. These are products with high demand in cities, which are characterized by a growing middle class population (for vegetables), fast food consumption, and street food consumption (for pork and poultry products). The normal diet in an urban household consists of maize, rice, green bananas, and cassava and to some extent sorghum and millet, as the main sources of carbohydrates. These are taken with beans and or vegetables, meat, chicken and or fish during a meal. Fruits are not commonly taken during a meal. Fruits are only consumed at home or on the street as snacks.

There is a shift of yield improving investments away from quality and public health concerns to more concerns on quantity and earning quick money among the small holders particularly in Dar es Salaam, the largest city. This is more apparent in the production of milk, pork, poultry products and vegetables. There is higher application of pesticides in Dar es Salaam city than (23.1%) in any part of the country including the rural areas (pesticides application is (15.4%) in other urban areas and 9.2% in rural areas). High use of organic fertilizers in Dar es Salaam (29.3%) compared to other urban areas (12%) and rural areas (11.5%). Low use of inorganic fertilizers in Dar es Salaam (6.5%) compared to other urban areas (23.8%) and rural areas (7.7%)

Malpractice in the use hormones and public health hazardous chemicals has been observed. The main drivers of vulnerabilities of urban agriculture-food production are three fold: (i) constrained access to productive assets and technology, (ii) constrained access to land (iii) ecological or environmental constraints. Technological change in the agricultural sector is an important determinant of structural change in the sector in terms of increasing the level of agricultural productivity, specialization and sustainability. Agriculture in Tanzania is still labor intensive and low skill- and low technology intensive activity. There is still limited utilization of laborsaving technologies. According to the 2011/12 household budget survey, Over 90% of urban households still use a hand hoe. The use of laborsaving technologies in urban agriculture is below 1%. The statistics are similar for rural areas.

Furthermore, public policy is also an important driver of sustainability of urban agriculture in Tanzania. Though, the town plans are either outdated or are in the process of being designed or updated, access to land for urban agriculture, is still constrained by the urban land regulations, which are against farming in areas demarcated as urban. As urbanization picks up speed, the focus of public policy is to address the problem of unplanned informal land use and expanding infrastructure and public services.

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[2] As per National Gazette Number. 47

Urban authorities are expanding the urban space by demarcating agricultural land surrounding the urban areas as urban and agricultural production in such areas is by regulation prohibited.

Ecologically, pollution stands as a limiting factor for public health nutrition sustainability through urban agricultural food production in Tanzania. Over 70% of the urban households are living in squatters. Less than 70% of the solid and liquid west produced by industries and households is collected. Vulnerability of Food and Nutrition sector (FNS) to pervasive postproduction activities: Uncontrolled use of preservatives on dried foods and liquid foods due to limited institutional capacity to enforce food safety practices and public education and awareness raising campaigns through the public media and extension services

On the consumption side, Consumers in the big cities and municipalities are confined to the consumption of food products produced using chemicals (fertilizers and pesticides in the case of crops, and hormones and animal drugs for livestock). Consumption in this case is determined by availability and relative prices instead of consumer preferences. Such products are cheaper and more consumed in Dar es Salaam compared to products produced using traditional methods e.g. free-range chicken. In other urban areas, consumer preferences are against products produced using modern varieties and production methods. Consumer preferences are towards animal products produced using traditional varieties and technology.

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Outlook for the Purchase Food Program (PAA) in one the county of the northeast of Brazil

Moema Kelly Nogueira de Sá[1]; Victor Pereira de Oliveira[2]; Daniela M. Carvalho[3]

***Abstract* – The Foods Acquisition Program-PAA is one of the actions that contribute to tackling hunger and poverty in Brazil, presented as proposed strengthening family agriculture through generating income and access of the population food insecure nutrition and the acquisition of healthy foods, involving field and city. Thus, we investigated this program in the County of Garanhuns in Pernambuco. Even with a significant rate of urban population, Garanhuns is revealed as a major convergence hub for other neighboring municipalities. The PAA is operated by a partnership between City Hall and the Agronomic Institute of Pernambuco-IPA to purchase the products at the market price. Currently, 34 farmers are registered, may obtain an annual individual income of up to R$ 6,500.00. The purchased foods are passed on to charities that receive and assist about 1,000 people. Therefore, the implementation of the PAA has enabled local family farmers opportunities for market opening and completion of income, also benefiting individuals who will have access to quality food. However, problems with the program irregularity has brought a certain discomfort for the target audience.**

***Keywords* - Family agriculture; Public Policy; Foods.**

1. INTRODUCTION

According to the UN report by the Food and Agriculture Organisation-FAO (2014), hunger is seen as synonymous with chronic malnutrition caused by lack of food in the body for long periods of time. In search of famines we find many different causes, and may be related to factors such as: poverty, overpopulation, wars, social inequality, natural issues, civil conflict and also the poor planning of economic policies . Since the death of the individual hunger is considered the most serious consequence. In poor and developing countries, some of these factors are generating others, so we noted that poverty, social inequality and the poor planning of economic policies are capable of producing civil conflicts, wars and extreme poverty, providing further weakening of individuals in their social, economic and political, leaving them to shore and hostages of those in power. The whole produced for the marginalization of individuals, hunger stands out for begin human misery and her subjugation and domination. Therefore, countries, regions and segments of society, under the most varied domain settings, have been on hunger and food insecurity situations. So we bring the context of this discussion to the reality of a municipality (VEIGA, 2002), in the light of the Food Acquisition Program, the PAA, which may be representative for other realities. Thus, the goal of this research was to evaluate the viability and prospects of arrangement of socio-productive inclusion of the PAA, involving actors from the countryside and urban areas of the municipality of Garanhuns, Pernambuco, Brazil, linked to the production of income and reduction hunger and food insecurity.

1.1. CHALLENGES FOR PUBLIC POLICY IN BRAZIL

In Brazil, especially in the last decade, there was the improvement of economic indices with increasing investment in public policies, focused mainly on the field, which helped stimulate productive investment for small farmers by improving the income of these and also access to food for the population food insecure. The efforts made by the country allowed to decrease poverty in the period 2003-2012 from 24.3% to 8.4%, malnutrition rate fell from 10.7% to less than 5% and extreme poverty also fell from 14% to 3.5%, noting that the program related to the fight against hunger and poverty have brought positive effects. According to the IBGE (2010), the majority of the population in a situation of food insecurity in the country is in the Northeast, 9.3% of households in both rural areas and in the outskirts of large cities.

The PAA is a confrontation among other programs of hunger and poverty in the country, created by the Federal Government in 2003, which was aimed at: ensure access to food in quantity, quality and regularity to populations in need of food and nutrition insecurity and promote social inclusion in the country through the strengthening of family farming (BRASIL, 2010).

The Food Acquisition Program consists of 5 different modes, namely: Purchase of Family Farming for Simultaneous Donation, Inventory Training in Family Farming, Buy Direct Family Farming Incentive to Milk Production and Incentive and Institutional Buying; all with different goals and functioning and not necessarily run concurrently in the same municipality. The amounts paid to farmers can range anywhere from R$ 6500 to R$ 8000 a year.

2. METHODOLOGY

The research was conducted in the city of Garanhuns directed to farmers producing food and philanthropic institutions for the distribution of products. Therefore, he elaborated a questionnaire with questions about what is produced and the corresponding amount at the same time conducted a survey to know the cataloged institutions and the amount of people receiving food. One of the items of the sur vey was to check the process of continuity of PAA in Garanhuns and its relationship with neighboring municipalities.

3. RESULTS

Thus, it was found that among the municipalities that are included in the PAA, Garanhuns, located in the Territory of the Southern Agreste, in the state of Pernambuco, stands and influences the other, as a commercial and service hub, and present a number of

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inhabitants of 136 057 inhabitants, according to IBGE (2010), and approximately 89.1% live in urban areas. As regards the rural areas, we highlight the considerable presence of small properties. Thus, currently in Garanhuns 34 farmers are tied to this program and weekly provide a range of products "in natura" and processed, according to figure 1.

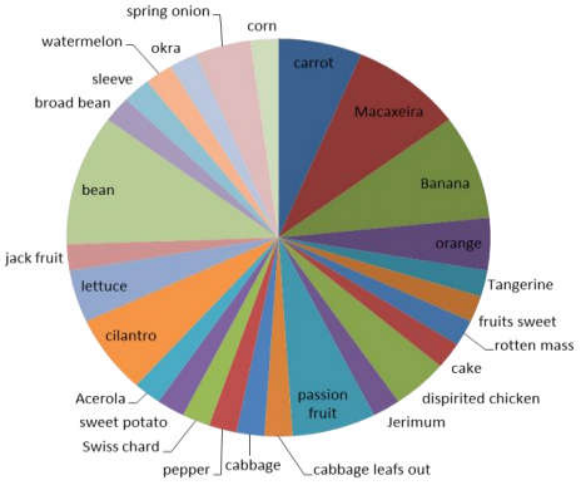

Figure 1: Products marketed by the PAA in Garanhuns (PE), in 2015.

The program has contributed to increasing the income of small local farmers, providing them a regular market for the allocation of part of its production. At the same time, it contributes to reducing the harm caused by hunger and misery to the poor of Garanhuns, providing food acquired through a free care system, brokered by 10 charities registered in the program (Table 01), enabling the construction of bonds of solidarity between these inhabitants of the municipality.

Table 1: Philanthropic institutions benefited with the kind of Purchase and Simultaneous Donation in Garanhuns, PE and the contingent of attended persons.

Charitable organizations	N. of persons
Abrigo São Vicente de Paulo	73
Mãe Coruja	116
Creche Bethesda	145
Creche Santa Terezinha	126
Desafio Jovem Trindade	35
Creche Lar da Criança Santa Maria	280
Assoc. Católica Lar de Nazaré	79
Associação comunitária Clube da Vivência	100
Creche maçônica beneficente Marta de Abreu Cavalcante	105
Lar Eterna Aliança	121
TOTAL	**1180**

Source: IPA – Agronomic Institute of Pernambuco, Garanhuns, 2015.

4. Conclusions

We can say that the PAA has been a mechanism for the creation and expansion of the market, promoting the diversification of crops and benefiting from a range of families who survive on agriculture, to encourage the production of food and allowing producers to have a key role in promoting food security. However, the problems found are due no continuity of the program in some months of the year. The main obstacle of the PAA, in recent years of implementation in Garanhuns, is because of the occurrence of system outage periods used by the Ministry of Social Development which last about six months, which in practice means that those family farmers supply their products to the program by the contracted rates, sometimes above practiced in the market on that within six months of the year are unable to deliver their products, resulting in a discontinuity of activity end of the PAA, and logically leaving the actors involved in a helpless situation. We therefore conclude that the effective success of this program is linked to the follow-up process throughout the year, where some family farming products that are seasonal may be replaced by others and thus also meet the demands and needs of the population with food shortages.

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Food and farming meanings: reconnection between producers and consumers in a Brazilian food security policy

Milena de O. W. de Capistrano, Renato S. de Souza[1]

***Abstract* – This study arose from the debate about supply chains in large urban centers. The objective was to investigate the reconnection between producers and consumers in a short food commercialization circuit mediated by the State. We focused on a Food Bank of Urban Rural Formation Center Irmã Araújo, created by local social organizations to implement a Brazilian nutritional and food security policy in Paraná, South Brazil. In this respect, we found that these local social organizations had conferred to operational dynamic public policy some of your inherent characteristics. The Urban Rural Formation Center has incorporated pedagogical dimensions related to participation civil society organizations in decision-making spaces policy.As well as brought the principles and values of Solidarity Economy to this market. Besides that, the Formation Center social relations with the organization of families settled producers agroecological food were able to enlarge the principles and values of Agroecology at this market. Those elements would be able to implicate on the reconnection between food producers and consumers.**

***Keywords* – short food commercialization circuit, Agroecology, institutional markets**

INTRODUCTION

The present study aims to understand a recent public intervention of the Brazilian State to meet the basic needs of individuals affected by food and nutritional insecurity and social vulnerability. And to put a perspective going beyond to measure or quantify policy results. The objective was analyze the reconnection between food producers and consumers on the institutionalization process of a nutritional and food security public policy as a short circuit commercialization of agroecological products.

A Food Bank operational dynamic of the Food Acquisition of Family Farming Program (PAA) was investigated. From a cognitive approach, we focused the individual and organizational social action on the institutionalization process of this Program as a short circuit of food commercialization.

Three assumptions guided the investigation. At the first, we assumed that the construction of social relationships between producers and consumers was attached to inherent characteristics of social agents Program operators, as well as individuals assisted by it. Those organizations and individuals could be able to influence and 'create' reconnection fac-tors. Furthermore, we supposed that such social relationships were affected by a local operational dynamic normative and regulative, created by those social agents while they were implementing the Program. Finally, we presumed that the social relationships created by local social agents could influence the creation and modification of shared meanings, principles and values. Even as influencing behaviors in order to promote reconnection between producers and consumers of agroecological food.

METHODOLOGICAL PROCEDURES

To conduct the research, a case study with a qualitative methodology enhanced the Food Bank created by the Urban Rural Formation Center Irmã Araújo (CEFURIA). This Food Bank was created on 2010 to assist the population affected by food and nutritional insecurity and social vulnerability in Curitiba and its Metropolitan Area, Paraná, through Simultaneous Donation PAA projects. We emphasized the projects implemented by settled families on the municipality of Lapa, Paraná, who were producing agroecological food. Thus, throughout 2013 we conducted participative observations from Food Bank. Also, we applied semi-structured interviews with several social agents located at different points of the Food Bank, since production to consumption.

BUILDING RECONNECTION

This debate emerges in a context where a highly institutionalized global food system consolidated at the world since second half of twentieth century (Friedmann and McMichel, 1989). The configuration of a fragile world food system based on long distances also became precarious the access to food and land for an increasing number of people (Friedmann, 1993). This happened in Brazil allied with an agricultural modernization process, which implied on populational concentration in large urban centers. The same process increased the production systems' artificialization and was responsible by disconnection between ecosystems and local knowledge.

Agroecology and social construction of markets has been presented as ways to reconstruct agrifood systems through development of local markets and proximity circuits as supporting pillars and also aiming regional, national and international links (Pérez Cassarino e Ferreira, 2013).Considering the perspective from Maluf (1999), such initiatives might consist as public actions food supply. According with him, they would be able to acting as collage mechanisms to construction markets with issues about food access, encompassing to the public actions social relationships and institutional elements usually found in regional commercial activities (Maluf, 1999).

The PAA is a national policy created at 2003 with Hunger Zero Program. It innovative purpose is to combat food and nutritional insecurity in Brazil and, at

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the same time, to build institutional markets for family farming products. This Program have being analyzed by recent studies due to capabilities to reconfigure production, distribution and food consumption models, face to current food system disconnections.

At the present analysis, the reconnection was considered as the creation, modification and sharing of institutions by social relationships between agroecological food producers and the consumers. So as the influences of these institutions over social behaviors while local individuals and organizations implemented PAA projects. Even more, we considered the influences from those institutions over the local operational dynamic on the sense to reach social consensus and it perpetuation across the time. It is important to say the institutions concept, here, is used according to Richard Scott (1995, p.33).

TRAJECTORIES OF SOCIAL AGENTS AND LOCAL OPERATIONAL DYNAMIC

Considering the three presented assumptions, we observed that organizational configuration and dynamic created to the Program implementation was narrowly linked to social trajectories just as the world views from local organizations and individuals.

The Urban Rural Formation Center Irmã Araújo aimed to consolidate a model management to the public policy based on participatory and deliberative democracy. In order to reach it, the Formation Center incorporated it trajectory related to participation civil society organizations in decision-making spaces policy. So as it large experience on execute food supply actions by popular initiatives, since the 80th years. And allied to this model principles and values of Solidarity Economy.

Over the 2010 to 2013, the Food Bank organizational configuration increased the beneficiary public until near fifty social organizations from Curitiba and its Metropolitan Area, at 2013. In turn, these organizations were operating the food distribution for more than ten thousand people in social vulnerability and food and nutritional insecurity. The food was coming from six family farming organizations located at Paraná.

Beyond that, the Formation Center historical relation with an organization of families settled agroecological food producers was able to enlarge the principles and values of Agroecology at the Food Bank. This organization of settled families also brought to the operational dynamic your historical trajectory, principles and values. It associated the inherent characteristics related to campaigns and mobilizations for land rights through social movements. The same when it had inserted to the food donation projects the normative and regulative framework of organic production system. For this circumstance, the Formation Center become a social and cultural mediator for the agroecological values and principles.

The Food Bank consolidated a participative and democratic management model during the Program institutionalization process as a short food commercialization circuit. In this sense, Formation Center has adapted the normative and regulative broad framework of the public policy into local configuration and operational dynamic. Those pedagogical dimensions of the participation organized civil society were able to stimulate the creation, modification and sharing meanings about food access by populations at social vulnerability and nutritional insecurity. So as it had stimulated the identity citizens formation by individuals assisted for the Program.

It was possible to note that those institutional elements – cognitive, normative and regulative - would be able to implicate on the reconnection between food producers and consumers.

FINAL CONSIDERATIONS

By the national dimension and expected impacts of this Brazilian food and nutritional security Program it is more than necessary to monitor and measure it quantitative results. At the same time the issue highlighted by this research regards to the importance of social agents and local characteristics around the public policy implementation. Such local initiatives might also consist as innovative perspectives over the policy able to contribute with public actions food supply.

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Geographies of urban food commons & justice

Agnieszka E. Labonarska[1]

***Abstract* – Official/mainstream discourses of food security tend to consolidate a view of food as a commodity, emphasising the issues of quantity and financial access to healthy food, hence poverty and malnutrition remain closely related. In addition, the recent interventions focus on consumer choice (e.g. "buy organic", "eat locally"), situating the power to shape the food system within the spaces of individualised consumption rather than in the realm of collective action, as exemplified by the politicised struggles of rural food producers in many parts of the world, such as La Via Campesina.This paper aims to contribute to the current debates around food security, autonomy and inclusive governance by advancing the conceptualisation of food commons. In particular, it investigates the spatial politics of urban commoning to explore the potential for building solidarities between differently situated food security, justice and sovereignty advocates and practitioners. Methodologically, I employ Participatory Action Research (PAR) approaches with a number of UK-based urban agricultural initiatives that exhibit the characteristics of the commoning.**

***Keywords* – urban commons, food security, food justice, food sovereignty, urban agriculture.**

INTRODUCTION

In the UK, we are currently witnessing increasing rates of food poverty, accompanied by related health problems. For example, increasing coexistence of obesity and malnutrition can be attributed to the policy approach that sees a solution to food insecurity in the mass production of low quality, cheap food(-like) products (Patel, 2007). Official/ mainstream discourses of food security tend to consolidate a view of food as a commodity, emphasising the issues of quantity and financial access to healthy food, hence poverty and malnutrition remain closely related. In addition, the recent interventions focus on consumer choice (e.g. "buy organic", "eat locally"), situating the power to shape the food system within the spaces of individualised consumption rather than in the realm of collective action, as exemplified by the politicised struggles of rural food producers in many parts of the world, such as *La Via Campesina*. Given the growing complexity of the contemporary global food movement, scholars have recently begununpacking and problematising the linkages between food security, food justice and food sovereignty (e.g.Holt-Giménez and Schuttuck, 2011; Edelman, 2014; Bacon, 2015; Brent et al., 2015; Cadieux and Slocum, 2015; Tornaghi, *forthcoming*) pointing out toopportunities formovements convergence, but also to varying interests and power relations between differently situated actors in the food system.For example, Holt-Gimenezand Schuttuck, (2011)argue that food justice movements (active primarily in the western world) will play a pivotal role in bridging the urban-rural and North-South divides, provided that they will form alliances with the radical (food sovereignty) rather than reformist (food security) strands of the movement. On the other hand, Bacon (2015) points out that food sovereignty does not necessarily lead to food security, suggesting that the discourses should be seen as complementary rather than competing - where food security is an aim (and oftenthe first impulse for action),while the other concepts represent frameworks for navigating the transition.

Much less has been said about the locally-controlled food commons as one of the pillars of food security (Tornaghi, *forthcoming*). At the outset, commons refer to material and immaterial resources necessary for livelihood and wellbeing (such as housing, land, clean air and water, health, food, knowledge, sociality…), which are managed collectively by a heterogeneous group of users, according to self-determined rules and not for profit (*e.g.* De Angelis, 2007). Although imperfect and ridden with contradictions, historically, the practice of commoning has been able to provide the poorest sections of the society (the commoners) with basic sustenance (*e.g.* see Linebaugh, 2008 for a discussion of forest commons in England since 12th century). Today, as food-related environmental and health concerns are increasingly interwoven with responses to the economic recession, we are seeing a proliferation of 'actually existing commons' (Eizenberg, 2012) (re-)emerging in the urban landscape of the global North- often in the form of urban agriculture. While they often exist in spaces ignored by the state/ capital, the process of embedding and expanding the commons involves the formation of pre-figurative political activity through new ethicsof co-operation, solidarity and co-responsibility (Chatterton et al., 2012). Hence, spaces of commons require and deserve exploration.

This paper aims to contribute to the current debates around food security, autonomy and inclusive governance by advancing the conceptualisation of food commons. In particular, it investigates the spatial politics of urban commoning to explore the potential for building solidarities between differently situated food security, justice and sovereignty advocates and practitioners.

METHODOLOGY

What also emerges from the recent debates around food security is that urban agriculture, if approached critically (Tornaghi, 2014), has a potential to bridge the focus on production (food sovereignty), consumption (food justice) and the commons; andhence to shed a new light on the current debates (Cadieux and Slocum, 2015; Tornaghi, *forthcoming*).

For that reason, and guided by Bacon's (2015) call for 'relational interpretation and practice', I employ *Participatory Action Research* (PAR) approaches with a number of UK-based urban agricultural initiatives that exhibit the characteristics of the commoning, which I will refer here to as urban *food commons initiatives* (FCIs):

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1. Back to Front (Leeds) – a community development project supported by the City Council's department of Public Health. It aims at reducing health inequalities by encouraging people in the most deprived (and ethnically diverse) communities to grow food in their front gardens, while recognising local assets: not only material resources, but also skills and knowledge necessary to address food-related environmental, health and ethical concerns;

2. Grow Heathrow (at the outskirts of London) - established as a reaction against the construction of the Heathrow Airport's third runway. In 2010, a group of environmental activists occupied a neglected site of a former market garden and turned it into a food-growing, learning and living space, operating on the principles of resource autonomy;

3. Twelve grassroots urban FCIs from the UK's *Incredible Edible Network*, with anethos 'community, learning and business' and a growing worldwide presence;

4. Public Healing Garden (Leeds) – a medicinal garden in its early stages of development on Council-owned land, which aspires to become a new commons: collectively governed by the community of users withsupport from the Council's Parks & Countryside department.

DISCUSSION

Table 1: *Food Security, Justice, Sovereignty and the commons: convergences, divergences and contradictions* provides an overview of the theoretical aspects that will guide my interpretation of findings in the context of the relevant academic literature. [...] Overall, my discussion points towards new possibilities for forging solidarities between differently situated food security, justice and sovereignty advocates and practitioners; but also problematises our current understandings of the commons thus opening new debates around food security, autonomy and inclusive governance.

Table 1. Food Security, Justice, Sovereignty and the commons: convergences, divergences and contradictions.

*	Food Commons	Food Security	Food Justice	Food Sovereignty
1. Production model& society- nature relations				
2. Main actors & governance model				
3. Relations with state & market institutions				
4. Political and legal philosophy				
5. Internal contradictions and challenges				
6. Urban development model & urban- rural relations				

* Aspect of the discourse

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Counteracting food deserts. The role of street food vending in reinvigorating previously underserved urban spaces

S. Caramaschi[1]

***Abstract* – Even if healthy food is back on the agenda of a growing number of cities, for far too many people, and especially for those living in low-income neighbourhoods, the access to healthy options is simply out of reach. These underserved urban spaces have recently received a great deal of attention, seen as the product of poor proximity, means of transportation and shopping options in low income neighbourhoods. Street vending, as an interim use, is a mean to promote a livelier and healthier city, a potential tool that may generate positive community changes, if the agenda used to promote it specifically address existing inequalities. This paper argues for the use of street food vending as an innovative tool to counteract food deserts and to activate the public space of previously dramatic urban areas. It focuses on specific north-America street food strategies: New York City, Philadelphia, Seattle and Toronto have devised similar street food strategies with the aim to increase access to healthy food for the most vulnerable people.**

***Keywords* – Street food vending, public space, food deserts.**

Street vending has been an essential element in cities across the world, central to the health and well being of the community, fundamental to the vibrancy and liveability of urban areas. Over the last century, global changes influenced the relationship between cities and their food systems, resulting in diet related diseases, interruptions in food supply and transformation of streets and public spaces into transportation corridors. These changes led to the decline of urbanity that street vending has provided for centuries.

Recently, planning and design have increasingly focused on aspects of liveability, walkability, and quality of life for people, making efforts to refocus their priorities to these goals within their departments. In this context, ensuring that healthy food is accessible to all is crucial. Food security is defined as an individual's ability to access healthy options, a situation that exists when all people have access to sufficient, nutritious food. Without access to healthy produce, communities are also missing the commercial vitality that makes neighbourhoods liveable and helps local economies thrive.

Food is an issue that animates communities and prompts action like few other topics can: it improves streets and other public spaces for short-term, low-cost and temporary changes; it provides opportunities for people to gather; it gives a healthy choice and counteracts food deserts. Attracting and stimulating healthy street food options in food deserts is an important component of a broader strategy aimed to reinvigorate disinvested areas, improving health and urban outcomes in places that need them most.

A shared recognition of the role that food plays in creating more liveable, vibrant neighbourhoods and healthy communities has sparked support for different projects and initiatives, bringing temporary approaches back to the city. Farmers' markets, mobile food trucks, food hubs, and community gardens provide innovative small-scale options that reduce barriers to fresh, healthy food for vulnerable groups and under-served parts of the urban landscape.

A new trend in municipal food policy-making around the world has emerged in the form of *comprehensive municipal food strategies*: instead of treating food issues in isolation, food strategies aim to coordinate the full spectrum of urban food system issues within one policy framework, integrating food production, processing, distribution, access and food waste management. In this way, the strategy is a plan that helps city governments focus on coordinated goals and actions to improve their local food system.

While food strategies exist at other levels of government to address individual food issues, municipal food strategies tend to be customized because of their location within city governments, their attempt to treat food system issues holistically, and because of the ways they are situated within broader sustainability goals.

In recent years local governments including San Francisco, Philadelphia, New York, Seattle, Toronto, and London have developed such strategies. The results are argued to be further reaching than individual food policies, more in keeping with a multi-functional approach to urban planning and development, with the goal to increase social, economic, environmental, and health outcomes[2].

The *New York City Green Carts* program addresses a huge service gap by recruiting private vendors to bring fresh produce into food deserts. The program, adopted in March 2008, established hundred permits for vendors to operate mobile fruit and vegetable carts in high needed neighbourhoods throughout the five boroughs. From the establishment, community surveys found that the percentage of adults eating at least five daily servings of fresh produce increased by three percentage points in two years[3]. New York City has recognized the role street food served in building communities, supporting local identity, and bringing individuals together around the vital issue of access to healthy produces.

The early results of this initiative have made it a blueprint for other cities. In March 2010, the Philadelphia Department of Public Health launched *Get Healthy Philly*, a public health initiative with the aim to ensure that citizens can enjoy long, productive lives

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[2] From individual stand alone food policies to a coordinated food strategy (City of Vancouver 2013).

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free from disease, disability, and premature death, due to unhealthy lifestyles. From the beginning, Get Healthy Philly has been working to make it easier for underserved communities to eat better, maintaining a network of over 600 healthy corner stores, bringing new farmers' markets to low-income communities, and supporting street food vending around the city. Another unique initiative in Philadelphia is *Healthy Food Truck*, a partnership that helps food trucks to becoming healthy, providing nutritional labelling and promoting healthier meals. The initiative uses a business-friendly, community-based approach with the aim to encourage healthier decision-making and products that are, by default, better.

Access to healthy, affordable food is vital for sustainable communities and cities. As seen in the other two contexts, Seattle has made a healthy, local, sustainable food system a priority, with the aim to improve health, to promote equity, and to strengthen the city economy. *Stockbox Grocers* are temporary food stores around the city, based in a reclaimed shipping container and placed into the parking lot of existing businesses or organizations. Stockbox stores are designed to offer fresh produce to communities that do not currently have access to good food, creating dozens of stores located in urban food deserts and within walking distance of home, work and school.

As part of the city's efforts to increase street life and make the city more *walkable*, in July 2011, the city council adopted a new ordinance regarding street food vending, increasing the public use, enjoyment, and safety of urban places.

Something similar happened in Toronto, a city where a significant number of citizens face economic and geographic restrictions to accessing healthy and culturally appropriate food on a regular basis. While low income is the biggest barrier, a large part of the community live in neighbourhoods that have few quality and affordable food retail options within easy walking distance, along with relatively poor access to public transit. Even people living in areas that are well served by healthy food retail can face challenges, especially people with disabilities, seniors, newcomers, and single parents with young children.

In order to give people in food deserts access to fresh and healthy food, *FoodShare* Toronto, in partnership with the City of Toronto, came up with the *Mobile Good Food Market*. This mobile market stall travels across the city selling both local and imported produce, responding to the growing demand for locally grown produce and the culturally diverse produce desired by immigrant communities.

As seen in all these strategies, affordable healthy food in food desert provides a double task: it counteracts inequalities and prevents health issues, leading to more healthy neighbourhoods, building a sense of community, and filling vacant urban places with vitality and activity. Street vending strategies aim to change cities food landscape by bringing together issues of food security and health into solutions that provide communities with broader access to fresh food. All the projects expand the economic opportunity, promoting healthy behaviours and eventually activating public spaces in areas where access to food is limited and urbanity is missing.

Planning researchers and professionals have only recently highlighted the wide benefits street vending activities can provide within a community. Selling healthy food on the street adds vitality to the streetscape and serves as a form of tactical urbanism: due to their mobile and temporary nature, street vending activities fuel healthy and vibrant communities, making an important part of the local economy and acting as a powerful catalyst for inclusive neighbourhoods.

There is a growing recognition that street food systems have the power to get people closer to affordable, nutritious and culturally diverse food. The vital role in everyday life and the flexibility of the formats make street food systems an alternative way to counteract inequalities, increasing access to healthy food across different geographical scales.

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Food security and multidimensional linkage between poor urban consumers and nearby agriculture: towards a new definition of food justice

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***Abstract* - Demographic challenges and new paradigms for sustainability and food justice are upending the traditional interactions between supply and demand in food systems, particularly between urban populations and the agricultural resources. Metropolitan areas are witnessing a growing imbalance between educated, affluent consumers and their more disadvantaged neighbours in terms of access to the high quality and fresh food supplies required for food security. This paper seeks to understand how nearby agricultural resources can contribute to food justice in these disadvantaged areas, and by extension in the metropolitan regions where they are found, regardless of their level of development. This study, based on three metropolitan areas (Lyon-Saint-Etienne, Malmö and Rabat), proposes a new definition of food justice and shows that access to nearby resources (by the consumers from the underprivileged areas) may not depend as much on their location or spatial availability as it does on the character of the relationships, which define processes of connection and disconnection between these areas and their resources.**

***Keywords* – food justice, agriculture resources, food governance**

INTRODUCTION

Periurban and urban agriculture with its multifunctionality, is now on the agenda of most of the metropolitan areas, as a singular symbol of postindustrial era and sustainable urban systems. Beyond providing food, three other functions are indeed fulfilled by agricultural resources: improving food security and safety, maintaining social ties in rural areas, and preserving the environment and sustainable natural resources. If recent research on urban and periurban agricultural resources have focused on landscape and health issues (Esnouf et al., 2011), there is a need to put the emphasis back on food and social issues. Indeed, which urban populations are concerned by initiatives of urban and periurban agriculture? If little research analyzes local food for the poorest populations, most of recent studies about periurban agriculture focus on organic farming (Boivin and Traversac, 2011) or on short food supply chains (Maréchal, 2008) without considering the social dimension of agriculture or the everyone's access to higher quality food. These gaps in research highlight a growing disjunction between some deprived urban areas and agricultural areas, even when the latter surround the former. This disjunction is further amplified if we consider that, conversely, initiatives connecting local small-scale producers (for example CSA projects) are now almost part of daily routine of the well-educated and wealthy urban populations. This questions the everyone's access to local agri-resources (now almost synonyms of quality, in the common sense) and lets also emerge new patterns of metropolitan inequalities.

Putting the emphasis back on food and social issues in research related to urban agriculture leads to reconsider the food justice framework (Gottlieb and Joshi, 2010; Cadieux and Slocum, 2015). Indeed, the notion underlines what is denied in the current food system and emphasizes the fair distribution of food resources within a given area, both in farming systems and in the supply chain. However, there is a lack of analysis concerning the abilities of local agriculture to reduce or enhance inequalities in metropolitan areas. We propose thus a dynamic and innovative definition of food justice, not based on the fair or unfair *distribution* of local agricultural resources, but on the exploration of *connections* or *disconnections* between them and disadvantaged urban areas. How do we explain such connections (or lack of connection) and what kind of local geography does it design? How can agricultural urban et periurban resources contribute to create or improve food security and safety of poor urban population ? How and through what processes do they participate in the construction of more sustainable and fairer metropolitan regions?

METHODOLOGY

Our communication is based on a comparative analysis involving three metropolitan regions, incorporated into different demographic, economic, cultural, geographical and political contexts: Lyon-Saint-Etienne (France) representing a model city in a developed context, Malmö (Sweden) representing a supposed model of sustainable city, and Rabat (Marocco) representing a developing context. Those three case studies were chosen because they all incorporate social and spatial injustices *and* recent and innovative evolutions regarding the link between city and agriculture. In terms of theory, it appears necessary to 'decompartmentalise' Global North / Global South approaches for analysing food security and justice. The circulation of these ideas has only recently entered the food studies by researchers comparing paradigms like food sovereignty in developing countries and food justice in developed countries (Cadieux and Slocum, 2015). This should also recognize the emergence of souths in the North and norths in the South (Landy and Gervais Lambony, 2007). It entails a common analysis of varying situations of food injustice, an

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examination of the relevance of the food justice concept in zones unexplored by the literature, and the identification of bridges between contexts and between regions which could generate innovations favouring greater food security and justice. Lyon-Saint-Etienne is the main field of this research. The urban community of Lyon recently initiated an ambitious strategy to reconnect the center to its agricultural peripheries, but this strategy emerges in a geopolitical context of territorial rivalry (Metropolis vs General Council). In comparison, Saint-Etienne's growth is far slower than Lyon's and its trajectory can be assimilated to the ones of "shrinking cities". However, in such cases, studies are almost exclusively focused on the development of "food deserts" without working on the relationships with the agricultural context. The city of Malmö is facing a lot of challenges regarding food justice. In this highly fragmented city where 40% of the inhabitants are immigrants, urban agriculture is growing in disadvantaged urban areas.

Regarding the developing countries, Rabat is experiencing a rapid growth phase, but alternative citizen initiatives and attempts to connect the city to its hinterland are emerging despite state centralization and land conflicts in the periphery.

Our methodology is based on the study of metropolitan initiatives that try to connect local agricultural resources with disadvantaged areas, such as markets, community gardens, urban agriculture, short food supply chains. Those initiatives were then compared with political discourses and strategies thanks to interviews with political stakeholders, in order to qualify the governance of urban food systems. Finally, we focused on the perceptions of the youth about agriculture, through a research-action with pupils in some disadvantaged urban areas in France, to explore the linkage or lack of linkage between producers and poor consumers.

RESULTS

Our study points out three main results.

(1) First, taking account the producer/poor consumer's perceptions of each other better explains the fragmented geography of short supply chains. A research-action program towards several groups of 11 years-old pupils located in two "deserts of short food supply chains" (Nikolli, 2014) shows a deep disconnection between youth and agriculture, which can be illustrated by perceptions that young people have about agriculture. Pupils are not aware of the nearby agricultural resources. The perceptions are made of several clichés about farmers and agriculture. Their food habits show that although they eat some fresh food, they value processed food. Our research-action program consisted in improving knowledge and awareness of the importance of agriculture amongst those groups of pupils. Our conclusion is that initiatives focused on awareness and knowledge can improve food democracy, thus promote the (re)connections, and thus, situations of food justice.

(2) Second, although the Western model of sustainable city and its consequences on local agriculture do create common patterns on urban food systems, each deprived area also generates its proper strategy with agri-food resources, able to create alternative models for enhancing food security. Moreover, the diffusion of such a model of connection between local agricultural resources and disadvantaged areas depends on the agricultural and institutional context. The case study of Malmö shows that although there is a rise of initiatives of urban agriculture in deprived areas, those initiatives missed their target, both in terms of goals and of targeted population. Indeed, those projects focus rather on environmental sustainability than on food justice. Then, they are addressed to immigrant people living in the disadvantaged areas, but they reach mostly the white middle-class, thus creating new injustices. This situation is reinforced by a lack of connection between the city of Malmö and local agricultural resources, illustrated by the lack of local food supply chains. The case study of Rabat leads to the same conclusion: the Western model of connection developing in Rabat (though CSA-box schemes, gardening,...) leads to new injustices. But migration networks (between rural and urban areas, or international migrations) set up new models of connections that are more familial, ensuring food security.

(3) Third, the relationship between poor populations, food security and urban agriculture relies on the local governance, but also on the political definition of "healthy" food in a context of urban pressures. But situations are very diverse, from coordination to disjunction between urban and food policies. For example, the case study of Malmö shows difficulty to set up a network of key players in urban agriculture, which is fostered by a lack of public money to support those initiatives. Thus, community gardening is rather used as a tool to develop a sense of environmental care and to as a tool of urban planning than as a tool to enhance food security and food justice.

Finally, multidimensionality of linkage between urban consumers and their nearby agriculture deserves therefore to be re-habilitated into the metropolitan theoretical and operational frameworks, not only to ensure sustainability: above all to foster social, spatial and food justice. This questions the problem of the appropriate scale to think the food justice matrix. At the metropolitan scale, food justice means to reduce injustices between poor urban consumers and food quality. But on a national scale, it means to improve food security, thus to improve food access for both urban and rural consumers.

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Les aliments dans la rue et la securite alimentaire des populations urbaines en Afrique sub-saharienne: le cas du Tchad

Abdelsalam Tidjani[1], Giorgia F. Nicolò[2], Mohamed Ag Bendech[3]

***Abstract* – Le secteur informel de l'alimentation de rue prospère dans toute l'Afrique Sub-Saharienne en raison du rythme accru de l'urbanisation (37% de la population vit en ville), du manque d'opportunités d'emplois formel ainsi que de l'introduction de la journée continuée de travail. Là où 47% de la population total est estimée comme pauvre, les services de restauration «formels» n'ont pas la capacité de répondre à la croissante demande d'aliments, à bon prix, ce qui constitue une opportunité pour le secteur de l'alimentation de rue pour prospérer. La présente étude vise à comprendre le contexte et les spécificités de l'alimentation de rue à N'Djamena et identifier des possibles points d'entrée afin d'améliorer la sécurité alimentaire de la population urbaine au Tchad.**

***Mots clés* - alimentation de rue, N'Djamena, urbanisation**

INTRODUCTION

Le secteur informel de l'alimentation de rue a été défini comme «le secteur produisant des aliments et des boissons prêts à être consommés, préparés et/ou vendus, spécialement dans les rues et dans les autres lieux publics similaires » (FAO, 1997). Il peut paraître marginal lorsqu'on le compare aux entreprises du « gros informel » en Afrique de l'Ouest (Benjamin and Baye, 2012), de l'industrie agroalimentaire et de la commercialisation des produits agricoles et alimentaires. Il prend cependant une dimension de « garant » de la sécurité alimentaire et nutritionnelle dans les centres urbains africains où l'urbanisation rapide et les difficultés économiques ont favorisé son développement. La ville de N'Djamena n'est pas une exception ayant connu une croissance démographique rapide depuis le début des années 1980. La population qui attentait 289.000 habitants en 1984, avait augmentée à 425.600 habitants en 1990 pour parvenir à 993.492 en 2009, soit près de 8,9 pour cent de la population totale du pays, avec un taux d'accroissement intercensitaire de 6% (contre 3,6% pour l'ensemble du pays) (INSEED, 2009). La structure des dépenses montre que le volet alimentaire est de loin le plus important au sein des ménages (68,1%) en étant deux fois plus élevée à N'Djamena que dans le reste du pays. En outre, le taux de pauvreté, bien que supérieur dans les zones rurales, concerne 11% de la population de la capitale. Les besoins alimentaires d'une population urbaine croissante conjointement avec le sous-emploi et la crise économique, ont favorisé le développement du secteur de l'alimentation de rue qui joue à la fois un rôle important comme source de revenu et pourvoyeurs d'aliments nutritifs et peu coûteux pour d'autres. En raison de son importance dans le tissu urbain, le but de cette investigation était d'atteindre une compréhension du secteur de l'alimentation de rue du point de vue institutionnel et socio-économique, entre autres, au Tchad en général et à N'Djamena en particulier.

MATERIELS ET METHODES

Les données présentées constituent une synthèse de cette étude menée par le cabinet CAFOR dans le cadre d'un projet régional de la FAO y conjointement avec des investigations et prise de données du Projet de Recherche et d'Accompa-gnement pour la Salubrité des Aliments de la Rue (PRASAR, 2014). La présente étude s'est dérou-lée en plusieurs étapes entre juin et juillet 2014, y compris la recherche documentaire, la conception des outils de collecte de données et l'exécution de l'enquête dans la ville de N'Djamena. L'échantillon interviewé d'un total de 216 restaurateurs et 289 clients, a été choisi au hasard parmi les classes sociales représentées dans les dix (10) arrondissements que compte la ville de N'Djamena. Tous les quartiers des arrondissements retenus ont été touchés par les enquêtes. Les données ont été saisies sous le logiciel Sphinx.

RESULTATS

L'alimentation de rue au Tchad est régie par la loi N°002/PR/2011 portant ratification de l'ordonnance N°014 /PR/2011 du 28 février 2011 portant code d'hygiène. Différents articles définissent la réglementation en la matière, pourtant, le cadre législatif et réglementaire reste peu développé manquant les décrets d'applications, notamment au niveau de la définition et du partage des responsabilités au niveau territorial. Ainsi, 61.6% de vendeurs interviewés ont déclaré n'avoir jamais eu la visite d'inspecteur de santé auprès de leur installation et environ 10% déclare devoir payer entre 4.000 et 48.000 CFCA par mois de pénalités et amendes pour ne pas se conformer aux règlements en vigueur, dont la vulgarisation est presque absente. Concernant le profil socio-économique du vendeur, les femmes sont les plus nombreuses à tous les niveaux, 84,7% des interviewées étaient des propriétaires contre 15,3% qui sont des employés salariés.

Presque la moitié des vendeurs sont des chefs de ménages (49,5%) qui sont généralement de grande taille avec une moyenne des membres d'environ 7 personnes (la moyenne nationale étant de 5,4 personnes). Pour 82,4 % des interviewés, la vente des aliments de rue constitue l'activité de subsistance principale démarrée au moyens d'un capital initial très faible: 62,5% déclare avoir investi un capital de départ

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compris entre 2.000 et 60.000 FCFA (équivalent au *Salaire Minimum Interprofessionel Garanti* –SMIG d'un mois) avec l'aide, dans 79,2% de cas, d'un membre de la famille et/ou à un amis. Seulement 1,4% a pu obtenir un prêt d'une organisation de microfinance et 0,5% a reçu l'appui d'un programme public. Parallèlement, les charges au niveau des vendeurs sont élevées et comprennent surtout les dépenses courantes de réapprovisionnement en matières premières, aussi bien que pour les services liés à leur activité. L'approvisionnement en matières premières est fait dans 96,8% des cas, au niveau du marché central de N'Djamena tandis que 3,2% des vendeurs achètent directement chez les producteurs avec des coûts additionnels à soutenir après achat. Moins de 1% déclarent produire directement les matières premières. Concernant la gestion des ordures, ce qui a des implications au niveau de la salubrité des lieux de vente et des aliments vendus, on note que ça incombe beaucoup plus aux vendeurs eux-mêmes car 81,5% s'en occupent personnellement et seulement 10,6% déclare que ce service est assuré par l'administration pu-blique. Aussi, des insuffisances en matière d'hygiène ont-elles été rapportées dans plusieurs études (Tidjani et al., 2013; Barro et al., 2002; 2006).

Tableau 1. Responsabilité de la gestion des ordures (question à réponses multiples)

Responsable de la gestion des ordures	Nb. cit.	Fréq.
Non réponse	18	8,3%
Administration publique	23	10,6%
Propriétaire privé de l'espace	15	6,9%
Communauté	1	0,5%
Organisme sans but lucratif	2	0,9%
Le vendeur lui même	176	81,5%
Prestataire privé	10	4,6%
Personne	1	0,5%

DISCUSSION

Il ressort que les femmes sont les plus nombreuses à s'occuper des aliments de la rue, cette prédominance étant signalée également au Burkina Faso (Barro et al., 2002), Mali, Ghana et Sierra Leone (Nicolò et Ag Bendech, 2014). L'activité de vente des aliments de rue est, d'une manière générale, rentable car aucun des propriétaires rencontrés n'a déclaré travailler à perte. La moyenne des profits mensuels (calculée sur la base des 84,7% des vendeurs) est de 82.370,52 FCFA qui est superieure au SMIG. Cependant, le secteur demeure toujours informel soit à cause du manque d'incentives que des insuffisances en matière de contrôle et d'inspection. Ainsi, l'accès limité à des opportunités de financement formel pourrait aussi expliquer, entre d'autres causes, l'impossibilité des vendeurs d' "ameliorer" l' environment et leurs outils de travail pour une meilleure higiène des aliments vendus

CONCLUSIONS

Le secteur de l'alimentaition de la rue au Tchad joue un rôle important car il procure des revenus aux ménages et assure la couverture des besoins nutritionnels de la majorité de la population. Cependant, par manque de structures et infrastructrures adéquates, les vendeurs se trouvent confrontés à d'énormes difficultés notamment l'insalubrité de l'environnement, ce qui nécessite une forte intervention de la part des institutions étatiques, particulièrement les communes pour un bonne gestion et un bon rendement du secteur

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Threats for latent exposure to chemical food contaminants: a dilemma of urban agriculture in Uganda

Irene Naigaga[1], Juliet Kiguli[2], Mercy Kyangwa[3], John Bosco Amuno[4] and Rose Mugidde[5]

Abstract **- The pollution challenges leading to exposure to food contaminants in the Lake Victoria Basin are a dilemma. Pollutants find their way into ecosystems and resource bases that are frequented by the urban dwellers, mainly women in their quest to sustain households. Research was undertaken in Jinja, the second biggest town and industrial place in Uganda. A survey, interviews, and focus group discussion were conducted with urban dwellers and policy makers. Data was analyzed and indicated a strong relationship between patterns of resource use, modes of exposure to contaminants in polluted environments and gender. Factors observed to predispose the poor urban dwellers to contaminant exposure were classified according to people's activity lifestyle as follows: water contact practices, proximity of gardens to chemical and microbiological contaminated sites, close range of residential areas to chemical contaminated sites and vector breeding sites, lack of access to safe drinking water and sanitation facilities, and filthy homesteads and over-crowding in homesteads. In conclusions, it was realized that policy address is necessary and key to improving livelihoods of people in urban areas and urban agriculture is the survival strategy for poor women and men living in polluted areas.**

Keywords **– Threats, Latent Exposure, Chemical, Food Contaminants, Urban Agriculture, Uganda**

INTRODUCTION

Pollution of natural resources is a worldwide phenomenon that has increasingly become not only a plenary of scientific concern, but also of gender and social economic concern. Pollution, which includes chemical / heavy metal, microbiological, eutrophication and suspended solids (Odada et al. 2004), becomes a gender concern when it affects the quality and productivity of natural resources that support the livelihoods of the women, men, girls and boys that depend on such resources. A gender analysis in environmental management, leads to understanding women and men's relationships to the environment and this plays avital role in developing solutions for more sustainable use of natural resources, particularly because traditionally, patterns of resource use have been classified along gender.

There is therefore a need to understand and appreciate the relationships between gender, pollution and associated legislation governing resource use, which resources are polluted to varying degrees; a practical dilemma in modern natural resource management. The dilemma is not about presence of pollution per se, but also on routes and modes of exposure, that are dependent on patterns of resource use, which patterns are in most cases gender clustered. The discussion in this paper emphasises the importance of engendering activities and patterns of resource use that predispose the users to pollution, this in relation to legislation that guide resource use in the Lake Victoria Basin. This may help highlight the gender category at risk of pollution exposure and could also lead to formulation of engendered policies, hence gradually reducing the risks of exposure and consequently prevent unconscious exposures.

METHODS

The study area was Kirinya East and West wetland, which is part of Jinja Municipality. This wetland was considered to be polluted with contaminants from various activities carried out within the wetland or in its catchment areas. Industrial and sewage effluent from Jinja Municipality also flows into this wetland before it drains into Lake Victoria.

Data was collected using questionnaires, Focus-Group Discussions (FGDs), and Interviews with key informants. Data was collected on the current state of people's knowledge on chemical pollution, and their level of awareness of potential risks, the activities they carry out in the wetland and the consequent benefits they receive.Altogether, 75 men, 75 women, 7 boys and 1 girl were interviewed making a total of 158.Focus Group Discussions (FGDs) with about 8 to 10 people were conducted, with representation from different categories of people utilising the wetland: women and men, farmers and fishers, and with women and men alone. Interviews infor-mants were carried out using semi-structured interview schedules. Key informants included Jinja Municipal Council Environmental Officer, the Division Environmental Assistant, and Officials from the Jinja Urban Women Wetland Organization (JUWWO).

Analysis was carried out using the SPSS statistical computer package, and descriptive statistics were used for the display of the data summaries. To establish the existence of any relationships between variables, a chi-square test was conducted. With respect to categorical data, the observations were summarised using frequencies, which were generated in percentages.

RESULTS

The socio-economic activities carried out in the wetland included crop farming, fishing, harvesting craft materials, gathering medicinal plants and livestock grazing. A significant relationship was observed between the above activities and gender categories ($\chi 2 = 14.568$, $df = 17$, $p < 0.05$), with

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89.3% of the women practising crop farming, compared to 84.0% of the men. More men utilised the wetland for income alone, and for both income and food (54.1% and 53.3% respectively). More women (62.2%) than men utilised the wetland for food alone. A significant relationship was observed between level of awareness of wetland activities that led to exposure to contaminants and gender categories ($\chi 2 = 4.536$, $df = 1$, $p < 0.05$); of those who were aware, 58% were men. The majority of women (54.7%) were unaware of the activities that led to exposure to contaminants.Based on field observations and community inputs, six risk factors for potential exposure to chemical and biological contaminants were identified (Table 1).

Table 1: Risk factors for potential exposure to contaminants, their predispoing activities and the most vulnerable gender category of Kirinya wetland resource users

Risk Factors	Predisposing Activities	Most Vulnerable Gender	Remarks
Proximity of gardens to chemical contaminated sites	Cultivation of food crops	Women	Rainy season
	Cultivation of cash crops	Men	Rainy season
Proximity of gardens to biological contaminated sites	Cultivation of food crops	Women	Daily
	Cultivation of cash crops	Men	Daily
Close range residential areas to chemical contaminated & vector breeding sites	Domestic Activities	Women and Girls	Frequent vector bites
Lack of access to safe drinking water / sanitation facilities	Domestic Activities	Women, Girls and Boys	Workload &Health Problems
Filthy homesteads Over-crowding in homesteads	Domestic Activities	Women and Children	Workload &Health Problems

DISCUSSION

Overall, there was a lack of awareness of chemical pollution in the environment and a resulting lack of awareness of the risks associated with it. Biological contamination was appreciated because of the associated immediate impacts through vector bites and disease. Both women and men were at risk of exposure to chemical and biological contaminants through water contact practices. The close proximity of residential areas to contaminated sites and/or infectious insect breeding sites puts women and children more at greater risk of exposure to chemical and biological contaminants, since they spend more time working in the field or at home than men do. Given their reproductive roles, women are less mobile and tend to be more active around the household. Pregnant women and children are especially vulnerable to chemicals and infectious insect bites, because of their weakened or underdeveloped immune systems, and are classified as risk groups (Scott, 2003). Lack of access to safe drinking water and sanitation facilities was a risk factor to all gender groups. However, women and children, who stay at home throughout the day, were more at risk and it is the women who are responsible for fetching water and keeping the homesteads clean.

The Uganda government has efforts and agendas to improve the livelihoods of women, for example gender policies to promote women's advancement. However, the outcome indicators suggest that this has not mastered the broad spectrum of expected achievements. Gender sensitive policies should be enshrined in all legislation that hinge on natural resources and environmental management. In this way, extension workers and private sector investors would favourably work with local communities through programmes of development and resource generation without compromising the integrity of the immediate environment. Gender advocates, environmental professionals, politicians, development partners and researchers, could dissolve the walls that have demeaned multidisciplinary efforts towards improving the quality of life for common man.

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The contribution of local food systems to healthy diets and sustainable consumption: a case study from the City of Rome

Dalia Mattioni[1]

Abstract **- In the context of increasing obesity and rising rates of non communicable diseases (NCDs) worldwide, local food movements emerged to propose an alternative to the industrial food system that has been partly considered responsible for the changes in health patterns. In supporting local food systems, consumers have expressed three types of "cares": a care for the environment, a care about transparency in the food system, and a care for health. By using the case study of a box delivery scheme in Rome, Italy – Le Zolle – this study analyses to what extent consumers are indeed able, through their participation in local food systems, to express their three types of cares and to become "active consumers-citizens". The results of this preliminary assessment showed that participation in a local food system helps consumers eat in a more healthy way, and to change their food-related habits (e.g. food waste reduction) and non-food consumption habits (e.g. use of environment friendly detergents) in more sustainable directions. Making alternative food provisioning systems available allows consumers to have a "transformative" role in the overall food system. This work adds to those calls demanding policies that ensure the existence of a balanced retail system, especially in cities.**

Keywords **– alternative food systems, consumers, health, social agency.**

INTRODUCTION

In the 1990s a number of food-related social movements were born to counter the growing hegemony of the "Food from Nowhere" regime, and to propose alternative food systems (Campbell, 2009). In supporting local food systems, consumers were keen to express three types of what Dowler calls "interlocking cares": a care for the environment and the local economy, a care about transparency and integrity in the food system, and a care for health and wholeness (Dowler et al, 2009).

A number of local food projects were initiated mainly in the Global North. After decades of activity, a lingering question that remains among researchers and practitioners is to what extent the various local food projects and movements are able to transform the current food system. For some, with a more "structuralist view", these projects remain a niche phenomenon, accessible only to a wealthy minority, and therefore do not have the capacity to radically change the conventional food system. For others who use a more actor-network theory approach, this view does not do justice to the role of consumers and their capacity to exercise agency and have a "transformative role" (Goodman et al, 2012).

The role of learning new ways of "knowing" food, both for the producer and the consumer, is considered as an expression of agency and one that can lead to innovation as consumers change their way of buying and consuming their food (Fonte, 2008; Goodman 2012). Brunori et al. (2012) identified four categories of consumers ranging from conventional consumers to active consumer-citizens: alternative food project, such as the GAS network that they analyzed, "can be drivers of the evolution of consumers from one category to another" through a continuous process of learning.

Given the above, and based on an actor-network theory approach, this study analyses to what extent consumers are able, through their participation in local food systems, to express the three types of cares introduced by Dowler, with a special focus on health, and to become "active consumers".

Specifically the study aimed to answer the following questions:

- To what extent do local food systems lead to healthier diets?
- To what extent do local food systems help consumers develop more sustainable food (and non-food) consumption habits, i.e. to become active consumer-citizens?
- What are the policy implications of the above?

METHODS

I took the case study of a box delivery scheme in Rome, Italy, in order to shed some light on the above questions. The scheme, called "Le Zolle", distributes food grown and processed by local small and medium organic producers to families living in Rome, Italy. The clients receive a box once a week containing fresh fruits and vegetables and, depending on the type of subscription, also cheese, eggs and meat. There is also the possibility of ordering other organic/natural food products - such as bread, pasta, sweets, differenttypes of cheese, etc – and non-food products, such as washing liquids, soaps, etc.

I interviewed five women, whose age ranged from 41 to 70 years old. The interviews lasted roughly an hour, were face-to-face and I had a set of guiding questions to guide the interview. The interviews were recorded, transcribed and coded depending on pre-defined themes, and those emerging from the interviews themselves. The five families to which the women belonged were selected randomly by Zolle except for two criteria: being a client of Zolle for more than 2 years, and at least two families had to have young children. The choice of having two families with young children was aimed at understanding what are the constraints that young children place on food choices and habits.

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RESULTS

In terms of changes in diet, all respondents except for one claimed to have increased the variety of fresh fruits and vegetables (FFV) they consume. Two of the respondents, who were also the youngest, reported eating more FFV than before. In terms of the proportion of processed versus unprocessed food, all the respondents reported that they did not consume many processed items before Zolle. However currently, when they do consume processed food, four respondents reported being more careful about where they buy it, and of the ingredients it contains.

In terms of changing food and non-food related habits, the food shopping habits of the respondents have changed: while 3 of the respondents went almost exclusively to supermarkets or local FFV vendors (that source their food in bulk- not local producers) before joining Zolle, most of them now go to organic supermarkets, or when they do go to supermarkets (and they go less), they are more careful about how much and what they buy there. Two respondents now buy certain products directly from the organic producers, while they never did before. Three respondents mentioned that they wasted less now, because they value more the food they receive. In terms of eating out, none of them have really changed their habits, except for one who choses Slow Food restaurants. Four of the respondents buy organic washing liquids from Zolle, while they used to buy them at the supermarket.

As for the respondents' values and motivations for choosing Zolle, these ranged from a concern for health, taste, freshness, the environment and the protection of agricultural labour. All of them appreciated the convenience of receiving the box at home and not having to shop anymore, and for those who had children the main trigger was the birth of their first child. Except for the 2 older women, the 3 younger women reported having learnt a lot through Zolle about how food is produced, about seasonality and the "rhythms of Nature", about new products, ingredients and ways of cooking. To use the words of a respondent: "Zolle increased my awareness of what I eat".

DISCUSSION

Using the categorization of consumers developed by Brunori et al (2012) , it can be concluded that Zolle has helped the interviewed clients become more "active consumer–citizens" by giving them material and immaterial support to modify their food and non-food habits. Surely, all respondents previously had a leaning towards certain values that led them to choose Zolle in the first place. But Zolle's role in communicating a different way of "knowing food" has in fact strengthened their original values or added new ones,thus helping to modify their food and non-food habits. Zolle has provided access to an alternative type of food provisioning, as well as learning tools such as recipes, producer profiles, trips to producers' farms - to mention a few - that have helped the consumer become more aware of sustainability issues (if they were not too aware of them before) or to live up to their values (if they already had an initial awareness). As one respondent said: "Zolle allowed me to be faithful to my principles".

Their being active consumer-citizens emerges from their willingness to pay a little more for Zolle, and from their efforts to overcome constraints linked to time and children's eating preferences. In both cases the respondents have used their imagination and resourcefulness to overcome the problem, by buying special kitchen utensils to help them speed up their cooking, negotiating with their children who do not like FFV, or by "hiding" the FFVs in the main courses. In this respect, consumers can be seen as "co-producers" of the food systems rather than just passive recipients of what the food industry choses to supply them with (Lamine, 2005).

To sum up, this study adds to other reports that have analysed the role of local food systems in transforming the overall food system into a more sustainable one, and the role of consumers therein. This preliminary assessment suggests local food systems may encourage consumers eat in a more healthy way, and change their food and non-food consumption habits in more sustainable directions. In policy terms, a provisional conclusion in line with other studies is that of ensuring a balanced retail system that allows consumers to select between different sources of food, and thus to actively contribute to transforming the overall food system.

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Urban-rural linkages and their future: impacts on agriculture, diets and food security

O. Mora, F. Lançon, F. Aubert[1]

***Abstract* – Recent debates on food and agricultural issues emphasize the significance of the spatialization of food systems and location of agriculture. In this emerging food system geography, urban-rural relationships play a significant role in food value chains, food security and nutrition, which is still poorly understood. This presentation explores these issues based on rural-urban scenarios at 2050. This research combines two approaches: a comprehensive scientific review of urban and rural changes, and a foresight method based on an expert group. Our results focus on four main future figures: megacities and rural-urban blurring; role of intermediate urban centres in agri-food networks; household mobilities and multi-activities between urban and rural areas; counter-urbanization and re-agrarianization. These four scenarios help to understand how distinct issues might be articulated, and to better differentiate what is at stake for agriculture and food security in those specific forms of urban-rural relationships.**

***Keywords* – urban-rural scenarios, spatiality of food systems, urbanization, mobilities, rural nonfarm activities, re-agrarianisation, agriculture and food security.**

INTRODUCTION

Recent debates on food and agricultural issues emphasize the significance of the spatialization of food systems and location of agriculture. Those debates concern national dependencies on world food markets which have come to forefront through food crisis, land grabbing international debate, the strong increase of non-communicable diseases related to diet in developing countries, and,in this context, a growing interest for urban agriculture, city-regions and re-location of food production. In this emerging food system geography, urban-rural relationships play a significant role in food value chains, food security and nutrition, which is still overlooked in spite of few studies (Tacoli, 2003; Marsden and Sonnino, 2012).

The aim of this presentation is to explore these complex and intricate issues based on scenarios of rural-urban linkages at 2050. Through these scenarios, we underline the significance of spatial assemblages of food system for food security and nutrition.

METHODS

This foresight research is based on two approaches: the first one is a comprehensive scientific review scanning current trends in urban and rural changes, and the second one is a foresight workshop based on an expert group and conducted as part of the Agrimonde Terra project on Land uses and food security in 2050, led by Inra and Cirad. First, this workshop resulted in building assumptions about urbanization and rural processes in 2050, based on the underpinning empirical observations and controversies. Then, crossing assumptions about urbanization processes and rural dynamics, we produce a matrix of scenarios describing urban-rural relationships in 2050. The aim of this double-entry table is to explore the widest-possible latitude of rural–urban interactionsand their implications for agriculture and food security.

RESULTS

Up to 2050, urbanization processes appear as major drivers of change, transforming social, economic, spatial, and ecosystem interactions between urban and rural areas, and playing a central role in determining the movement of food and the organization of agro-food networks.

Urbanization and the growth of cities have concentrated consumers in urban centers, physically distancing them from the spaces of agricultural production, making the feeding of urbanites reliant on complex and sometimes long supply chains that mix local, regional, and international scales.But the theory of a shift from a mainly rural to a mainly urban population, through rural-to-urban migration, that underpins the global rise of an "urban era" is currently being challenged, particularly through debates surrounding the analytical and statistical frameworks used to describe the urban and the rural, but also around the mechanisms at play (Brenner and Schmid, 2013). The apparent uniqueness of the urbanization phenomenon conceals a diversity of processes, including the dramatic growth of small and medium towns, the emergence of city networks and the development of large-scale me-gacities (Montgomery 2008; Moriconi-Ebrard et al 2010; McGee 2009).

A diversity of rural dynamics has been identified. First, non-agricultural activities develop in rural areas alongside agricultural ones (Haggblade et al 2010; Losch et al 2012). Non-farm activities provide additional income streams for rural households, drives permanent and temporary migration towards urban centres (with money and knowledge flowing back towards the countryside), and has led to the phenomenon of multilocal households (Rigg, 2006). Household strategies in particular prompt a reconsideration of the urban–rural dichotomy in favour of diverse possibilities ranging from urban to rural, which both provide opportunities and present challenges for households (Potts 2013). Second, from a spatial perspective, some rural areas develop into peri-urban areas as a result of urbanization pressures,with a specific mix of agricultural and urban activities (Lerner, 2011; Mc Gee, 1991; Moustier et al 2004). Third, synergies arise between rural areas and small towns as they are simultaneously a market for products, a place for food processing, and spaces of

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intermediation with other urban markets. Fourth, agriculture remains the primary activity in rural areas in developing countries. In regions where urbanization processes are weak, some re-agrarianization can happen, mostly due to political and social crisis. Rural areas and agricultural activities continue to face specific issues with regard to poverty, food insecurity and undernutrition; more than half of the people in the world facing food insecurity are small farmers (Andersson Djurfeldt, 2015).

Crossing assumptions about urbanization processes and rural dynamics, our scenariosto 2050 focuses on four main future figures: megacities and rural-urban blurring; role of intermediate urban centres in agri-food networks; household mobilities and multiactivities between urban and rural areas; counter-urbanization and re-agrarianisation. These four scenarios can help to understand how distinct issues might be articulated, and to better differentiate what is at stake for food security in those specific forms of articulation. Through the scenarios, three main issues appear that could determine the food security and nutrition issues in different ways: the household mobilities, the organization of food value chains, and the intertwining of urban and rural spaces.

CONCLUSIONS

Within this framework based on rural and urban current trends, we explored a number of issues working on assumptions at 2050. We confront the narrative of urbanization with the emergent processes of rural de-agrarianisation and development of non-farm employment. Linked with urbanization processes, modern food value chains, led by transnational food companies, are complexifying the interactions between urban and rural areas, intricating scales and places, resulting in nutrition transition and in different location of agricultural production. Also, despite the homogeneous global discourse on world urbanization, looking at the plurality and diversity of urban dynamics help us to reconsider the diverse impacts of urban-rural relationships on food and agricultural issues.

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Good food improves citizens' health

Angela Crescenzi, Raffaele Mannelli[1]

***Abstract* – An experiment to research policies and practices that shape the integrated bimodal approach to food: quality and quantity, excess or shortage. Food consumption in this work is also defined by meals consumed in the home and those consumed outside the family context, a trend which presently characterizes developing urban areas. This experiment was initiated in 2011 in Tuscany involving the health department and the direction of economic development, in particular the public health service, in its local preventive health program, and local food businesses (restaurants, canteens, etc.). The definition of simple food guidelines shared with these local businesses and the participation of a significant number of companies active in the food industry has allowed us to realize a network throughout the region. Presently, this network consists of about 500 registered companies that use these guidelines. The network is identified by a logo. This logo is promoted to the consuming public as a symbol with which to recognize e business that offers healthy foods and nutritious meals.**

***Keywords* – Lifestyle, Food, Healthy.**

INTRODUCTION

Medical evidence and scientific research emphasize the importance of proper nutrition on health.

These studies consistently indicate that good nutrition is a key pillar of our health and its maintenance.

In economically developed countries food consumption is a daily act that affects the entire population.

Lifestyles, working in cities and densely populated areas force people to consume at least one meal outside of the home where eating balanced and healthy meals is not always easy.

The most common measures of health education are part of well-established prevention programs organized by public health facilities. They try to counteract those changes in food habits that have emerged in recent decades.

A policy for the health of citizens must consider the many factors that affect lifestyles and consumption, and that these factors are influenced by development and changes in society.

The increasing presence of women in the workforce has fostered new ways of consumption in the family, forcing its members to eat more meals out, meaning that there are more children consuming meals outside of the home.

SOME DATA

The Italian National Institute of Statistics ISTAT informs us that lunch is still the main meal for the majority of the Italian population: 67.9 % of people, three years and older, while for 22.1% of the population the main meal is dinner.

In the regions of central and northern Italy a percentage of 30-35 % of the population consumes lunch outside of the home; that percentage is reduced to half in the southern regions and the islands.

HYPOTHESIS AND SUGGESTIONS

A development model that, for production characteristics and organizational complexity, affects citizens and families, healthcare services, businesses and the economy.

Poorer people have the greatest difficulty accessing a healthy, balanced diet.

Given the complexity of combining lifestyle and work, strategies were often compromised because they did not reflect the intricacy of the challenge. In fact, it is the individual who chooses to follow a healthy diet, so it is necessary that accessibility to healthy food is easily accomplished.

Making healthy choices easier for people eating outside the home is an ambitious goal of preventive medicine.

This requires the identification of alliances between members of the food production and distribution sectors to facilitate the consumption of meals having balanced nutritional contents.

Cities are the place where most of the population lives and works. Everyday life is punctuated by food appointments with people choosing to dine during their lunch break at facilities located in the vicinity of their workplace.

A CASE OF STUDY

The Tuscany Region has implemented a project which combines health and proper nutrition. It joins 500 restaurants and cafes . The project's name is "Healthy Lunch Out – PRANZO SANO FUORI CASA".

Consumer groups gave their support monitoring this project, involving companies associated with them, the local public health service, the DGs of the health and the economic development of the Region of Tuscany.

The first milestone was the definition of simple guidelines on how to prepare healthy balanced meals. This edict was shared with the local food industry businesses. In a short time the regional network had 500 members.

The network is identified by a logo through which the consumer can recognize establishments that are part of the network of restaurants that offer healthy food and eating options.

The network has a project site www.pranzosanofuoricasa.it where dining options can be found. Businesses that adhere to the guidelines can register or renew their membership annually.

The project has highlighted some issues regarding the evaluation of effectiveness in fact, it is easy to monitor the population at the time of consumption but it becomes difficult to continue this monitoring over a

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period of time in order to assess the impact of food choices on consumer health.

With the collaboration of local prevention and health education facilities sample monitoring over a lapse of time can provide useful information on the effectiveness of this project.

The project team is developing a method of observing consumer behaviour based on the use ofnew ICT tools that allow a social and physical prospect on the eating habits of the individual.

These reporting tools have great potential in this context but contain some limitations that must be properly considered and evaluated.

CONCLUSION

All food health and security policies should take into consideration the following elements:

- significant and constantly growing number of people eat at least one meal a day outside of the home;
- educational healthcare policies and nutritional issues are influenced by epidemiology studies carried out on the general population and not specifically on that part regarding meals eaten outside of the home;
- food service operators play a key role in access to a healthy diet.

It is essential that epidemiological preventive actions, interact with health education, food service operators and the population in order to facilitate accessibility to a healthy diet, especially for that part of the working population considered at risk.

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New culture of the territory for food security in the Mediterranean region

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***Abstract* – Food is a cross-disciplinary field at the intersection of land use planning, natural resource management, economic and social science. Tackling this complex issue requires to consider its multidimensional value including natural, human, relational and cognitive capital and specificity. The paper aims to contribute to food security debates through theoretical and analytical approach of the territorial dimension. Considering the Mediterranean region, it will be highlighted the potential of the care of the territory, which puts the maintenance of environmental status and agri-food patterns as the core of sustainable configurations. The relationship between the culture of food production and the culture of territory is sketched to re-embed food in its socio-cultural and physical place.**

***Keywords* – Food security, Territorial approach, Landuse plannng, Mediterranean region.**

INTRODUCTION

The approximately two hundred different literature definitions of food security confirm the large and complex nature of food production, access, and consumption. The concept of food security defined in the World Food Conference in 1974 has undergone three major changes during these last twenty-five years: i) from the initial global perspective and national to the family and individual one; ii) from the perspective in which food is primary and absolute to the enlarged one which include a structured set of means of subsistence, and iii) from an objective apporach to a subjective, linking the consistency of food availability with local food habits and the cultural acceptance.

In this framework, the contribution provides an innovative perspective to contribute to food security debates, highlithing the territorial dimension of food security. The concept of territory used in this paper is not a given space, but is a dynamic result of coevolutive relationships between established communities (and their cultures) and environment. In this sense, it is a highly complex living organism, consisting of places with their own identity, history, character, and long-term structure (Magnaghi, 2010; Benoît et al., 2006; Debarbieux et al., 2003).

THE TERRITORIAL DIMENSION OF FOOD SECURITY

The main hypothesis of the paper is that the territorial approach to Food Security may contribute to rethink the relationship between agriculture and settlement through the responsible management of tangible (including the agro-ecological ones) and intangible resources, oriented to the valorisation of their potential and capital. This implies, from a spatial, cultural, environmental and governance point of view, a deep re-interpretation of the food production places and patterns.

The theoretical approch of Territorial Perspective of Food Security has been recently deepened by FAO, OECD and UNCDF. Their studies underline the potential of this approach related to: i) recognize the multi-dimensional, multi-sectoral and multi-actor nature of Food Security and Nutrition (FSN), ii) address geographic socioeconomic FSN disparities, iii) understand and capture interdependencies and foster integration between the various levels of policy making, iii) recognize the need for crosssector coherence of FSN policies, iv) understand the territorial dynamics and potential as well as local and value endogenous assets, v) highlight the need for a decentralization of actions and public programmes taking into account the specific institutional conditions of each country, and vi) identify the key role of institutions and social participation in the implementation of FSN policies (FAO, 2013).

Compared to this theoretical background, this paper aims to focus another key element. The relationship between agriculture and territory is determined by a specific culture, considered as a set of practices, skills and social meanings that are "territorial" in the sense that happen in a place through spatial configurations, transmitted through groups which inhabit a territory, and which combine agriculture with many other human activities, including those related to the daily food purchase and consumption.

The culture of food production and the culture of food consumption, with all the connected activities, are two complementary sides of care of the territory. Becoming a shared social rule, this new culture of territory may represent a long-term strategy to ensure food and nutrition security re-embedding food (and its quality characteristics) in its sociocultural and physical place.

This approach is particularly relevant analyzing the southern Mediterranean contexts. Historically characterized by a great cultural and historical heritage, significant agricultural patterns and high biodiversity richness, this region is facing now a specific transition on agriculture-food-territory relationship, marked by political and social tensions, increasing trends of food insecurity and food prices, environmental vulnerability, and a growing urbanization and littoralization.

METHODOLOGY

The methodological approach of the research takes on territorial dimension of food security through three main types of linkage: i) socio-cultural linkages. As Hopkins underlines, food security is a basic need, basic to all human needs and necessary to ensure a lasting social order, closely related to the economic implications. FAO approach to FSN highlights some main aspects that we may include in the social-cultural linkages: agro-knowledge capital, tradition and social meaning. Our proposal is to add also the following: adaptation, popular creativity and informality. ii)

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Spatial linkages include access to land, access to market, access to services, exposure to risks as spatial determinants of Food Insecurity proposed by FAO. Our proposal is to add also the following: agricultural land-use patterns and landuse management with particular focus on the relationship between them and environmental impacts. iii) Governance linkages, that is the need to build a multi-level governance to enhance coordination of different interventions for supporting food security. In other words, the need of an integrated and territorial mode of food governance (Wiskerke, 2009).

RESULTS

To assume a territorial perspective to food security means to address the problem with a holistic and multidimensional approach. In this sense, the follow contribution is about the interpretation of the mediterranean diet based on the above mentioned criteria. From a socio-cultural point of view, this food model stands out to be scientifically wellcharacterized as a healthy dietary pattern. The convivial characteristic of meals highlights also the social dimension, so much so that in 2010, UNESCO proclaimed the Mediterranean Diet part of the intangible cultural heritage of humanity because it "promotes social interaction", and includes "set of skills, knowledge, practices and traditions ranging from the landscape to the table" (CIHEAM, 2008).

The potential of this system also affects the close relationship of food chains with environmental impacts (GHG, water and land footprint, etc). The mediterranean diet contributes to biodiversity conservation, first of all, because they promote the use of both cultivated cereals, fruit and vegetables, and spontaneous and wild species; secondarly, this diet including less meat and fewer animal products, reduces also the livestock sector impacts on biodiversity and natural resources. Furthermore, the use of local and typical products limits the environmental (but also economic) costs of the storage and transportation phases.

Recognising agriculture as a way to protect and preserve the environment means also take into account the spatial patterns of food producion, highlighting the strong implications of the land-use patterns and land-use management, as well the landscape multifunctionality (leisure functions, aesthetic functions, social functions, cultural functions).

In the southern Mediterranean countries there is a low level of vertical coordination between the various actors Involved in the food chain. While this is a deficiency, this situation gives way to configure different or new actors (formal and informal) at the local level, over the administrative units. This, on the one hand, contributes to maintain spatially bound producer-consumer relations. On the other hand, it leaves space for action to based on governance and outcome of regional specificities (social norms, traditions, agrarian structure, etc)

CONCLUSIONS

Some aspects will be underlind to conclude this brief reflection. The paper highlighted one of the most recent developments on food security debate and it aimed to launch theoretical and methodological advancement. FNS issues has been usually addressed at global, national or household and individual level, while the intermediate territorial level, with its specificities, potentialities and vulnerabilities, has been rarely considered.

The case of the Mediterranean diet (of which have been intentionally highlighted the positive features) is not aimed to be an exhaustive example, but mainly an exemplification for getting close the territorial dimension of food security. The territorial approach to food implies the need to limit scientific universalism (Wiskerke, 2009) and starting from the understanding of place-specificity, avoiding the trap of localism and not denying the international dimension. E.g, mediterranean region must be able to fit in the global agro-food trade specializing its agricultural production in the local typical products to compensate foodstuffs imports of which is less equipped. The Mediterranean contribution is used to summarized the potential of the proposed linkages to foster a critical understanding in the evolving debate. The challenges with regard to (re)connecting sustainable food access, availability, quality and stability to the territory will differ from place to place and so will differ the solutions. For this reason, the paper aimed to stimulate the reflection on open issues.

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Food insecure households: Perceptions of pastoral and agropastoral communities in the Ugandan cattle corridor

Maureen Mayanja, John David Kabasa[1], Juliet Kiguli[2]

Abstract **- We look at perceptions of pastoralist and agropastoralist communities about food insecure households. The study involved nine focus group discussions in addition to a questionnaire surveyof 1683 and 228 randomly selected agropastoralist and pastoralist households, respectively. A differencein perception between pastoralists and agropastoralists was that the latter perceived the food insecure as those who bought food while for pastoralists it was those who could not buy food. The respondents who perceived food insecure households as those with less than one acre of land were 49% agropastoralists and 50% pastoralists. Diversification into higher income earning products targeted for the urban areas e.g. charcoal burning by agropastoralists and cultivation of vegetables and fruits by pastoralists was one way of coping with food insecurity and reflected an urbaninfluence on these communities. Given the need for a deeper understanding of the context, beliefs and attitudes that shape lives of policy beneficiaries, we highlight some of the characteristics of the food-insecurethat are targetable by development strategies and policy. Further investigation of the link between perceptions and food security status is recommended.**
Keywords **– Perceptions, Food-insecure, Pastoralists**

INTRODUCTION

Interventions to mitigate food insecurity should be tailored to felt needs of community members. In a meta-analysis of household economy studies Misselhorn (2005) noted that research pays little attention to data that is more able to capture the multiple factors that have an impact on people's food security at their livelihood level. Perception based survey measures to improve the disaggregated identification of food-insecure subpopulations and their targetable characteristics and behaviours are not only appropriate but consistently find food insecurity rates several times higher than related hunger or insufficient-intake measures (Barrett, 2010). To our knowledge there are no documented studies in Uganda, whose scope includes perceptions about who the food insecure are. We considered the questions: What sort of households do pastoral and agropastoral communities perceive as food insecure? Our aim was to draw the attention of policy makers to community perceptions that can guide implementation of context specific interventions to mitigate food insecurity.

METHODS

The study area was Nakasongola and Nakaseke districts in the cattle corridor of Ugandaa predominantly pastoralist region where households are unable to produce all of their annual food needs thus buy food to complement their own livestock and crop production (FEWSNET, 2010). This cross-sectional study was carried out between July – August 2011 starting with focus group discussions (FGDs) followed by a household survey. Each focus group (FG), involved 10-15 purposively selected participants from about six different villages per subcounty. Agropastoralists FGs were two women only and four mixed men and women; while pastoralists were two and one respectively. Sampling for the questionnaire survey was first by stratifying the two districts into agropastoralists and pastoralist livelihood strata from which 30 villages were randomly selected per district and 20 households per village to give a sample size of 2,400 households. We analysed data from FGDsby themes and from questionnaires using Ms Excel 2010.

RESULTS

According to agropastoralist FGDs the food secure were those who could afford to sell off some food items and were never seen buying cassava and sweet potatoes from the market. Instead they had cultivated gardens withat least 2-3 acres of such food items. A leader in an agropastoralists FGD in Kalungi subcounty described food insecure households as "those who have no gardens with at least one acre of cassava and sweet potatoes, do not cultivate thus buy most food, have no access to preferred foods, eat only one meal a day and whose children often fell sick." Mixed FGD, Nakasongola.

Pastoralist FGDs stressed that market dependency was a norm - the issue was whether one could afford to buy the preferred food items for three meals a day. A participant in a pastoralist FGD in Wabinyonyi subcounty described food insecure households:"they may drink only porridge at meal times; the mothers stay hungry and instead feed their children and they only serve millet and maize meal at meal times." Women FGD, Nakasongola.

Additional perceptions about food insecure households included aspects of:

- Behaviour: agropastoralists beg for food while pastoralists go to bed hungry.
- Consequences: Household members, particularly children, look unhealthy and are sickly.

During FGDs some coping strategies used during food insecurity emerged, such as diversification into activities beyond the traditional livelihood ones. Agropastoralists fish eels from swampy areas and buy trees to burn charcoal; while pastoralist stook on cultivation of higher income earning crops like

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eggplants, water melon and green pepper as well as trading especially in dry maize and maize flour.

Survey data was analysed from 1683 agropastoralists and 228 pastoralist households (80% of the targeted sample), of which female respondents were 55% and 53% respectively. Respondents majorly perceived food insecure households as those with less than 1 acre of land (49% agropastoralists, 50% pastoralists); low acreage of drought resistant food crops like cassava (47% agropastoralists, 50% pastoralists) and those who ate less than 2 meals a day (42% agropastoralists, 37% pastoralists). Other perspectives about food insecure households are presented in Fig 1. Household respondents had an additional characteristic of food insecurity as "household head and members being casual labourers", which was not mentioned during FGDs.

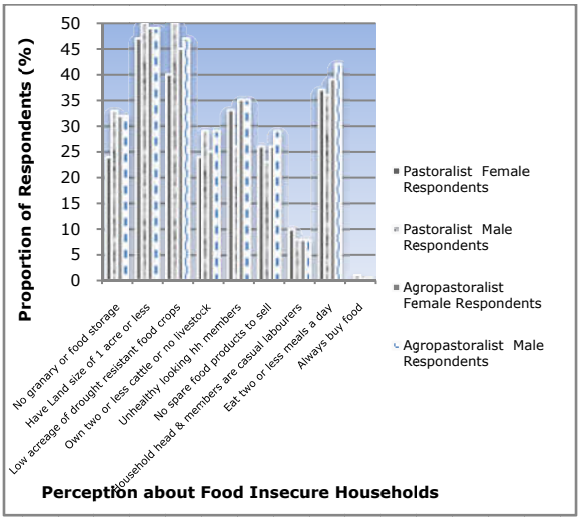

Fig 1 Perspectives about Food InsecureHouseholds

DISCUSSION

When agropastoralists perceive households to be food insecure if they buy food and can't sell any of the food items they grow, interventions could target food availability through promoting farming beyond subsistence but for the market too. If for pastoralists food insecurity is about not having money to buy enough food, food access could be targeted through indirect policies - e.g. on livestock marketing and inputs - to promote higher income. However, in their analysis of food and agricultural policies in Uganda, MAFAP (2013) note that the food security subsector - maize, cassava and beef - is characterized by disincentives to producers, e.g. non-functional value chains and market institutions. This implies some households may not easily embrace production for expanding trade and calls for the attention of interveners in setting relevant strategies. Nevertheless, the community's existing engagement in diversification activities like production of high value fruits and vegetables targeted for sale to urban areas remains an opening for income generation and also reflects an influence of urban areas on these pastoralists.

Furthermore if unhealthy looking members and often sickly children indicate household food insecurity then this community would likely embrace interventions targeting food utilisation. For example within the framework of the Uganda Food and Nutrition Policy one objective, as stated by GOU (2003),is to improve the knowledge and attitudes for behavioural change of communities in food and nutrition-related matters, it is thus imperative that its implementors consider such community perceptions and plan knowledge dissemination strategies accordingly. This would meet the urge by World_Bank (2015), for a deeper understanding of the beliefs and attitudes of beneficiaries in order to yield policies that "fit" local conditions and thus have a higher probability of succeeding.

CONCLUSION

The significance of this study is that we highlight some community perceptions about characteristics of the food-insecure and these can be targeted directly by development projects, strategies and policy. Diversification activities in order to cope with food insecurity are highly indicative of the growing role of urban food influences on the pastoral communities. Further research needs to check the link between perceptions, coping behaviours and household food security status.

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Food security of stakeholders from upland to lowland communities, Nagcarlan Laguna, Philippines

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***Abstract* – Food Security cannot be answered by providing appropriate technologies needed in increasing production. Agriculture stakeholders usually cannot attain the increase in production as a result of a given technology because they cannot afford to buy the needed inputs. Agriculture stakeholders from upland and lowland communities OF Nagcarlan, Laguna, Philippines were interviewed and the manner on how they manage the shocks and stresses brought about by food insecurity were studied. Their nutrition statuses were also compared. Results showed that farmers from upland communities were more resilient to shocks and stresses brought about by food insecurity than farmers from lowland areas since they own the lands they farm and they consume the root crops that they harvest. The farmers from the lowland communities on the other hand do not own the land they work on and the presence of many food outlets in the area make them feel that they are poor because they do not have money to buy food. The nutrient status of upland farmers is much better than the lowland farmers, since some farmers in the lowland missed eating regular meals. The difference lies on eating own produced root crops compared to street foods in the lowland. Differences can also be observed on how stakeholders were provided with the enhancement of social, human, physical and infrastruc-ture capitals from the government.**

***Keywords* – Food security, resilient, shocks, stresses**

INTRODUCTION

In 1996, during the World Food Summit, a pledge has been made regarding the commitment of achieving food security for all and a continuous effort to get rid of hunger in all countries. Almost two decades have passed and food security remains a major goal of many nations. High levels of poverty and poor nutrition are the constant struggles of some countries in Asia (ADB, 2013) and developing countries have always been confronted with issues of food security among its citizens. Several programs are undertaken by various organizations to curb these problems. One of which is the twin-track program of the FAO to combat hunger and increase direct access of the most needy to food (FAO, 2006).

The Philippines has never been exempted from the problem of food security. Food security has been one of the priority programs of the government. This study was undertaken to provide an overview of how upland and lowland communities in the Philippines differ in terms how they manage shocks and stresses brought about by food insecurity in the community.

Food availability, food access, utilization and stability are the common points associated with the concept of food security.How these concepts were located in the case of the two communities were carefully looked into in the study.

METHODOLOGY

The study was conducted in upland and lowland communities of Nagcarlan, a second-class municipality in the province of Laguna. Nagcarlan, being an agricultural community is considered to be the vegetable producing district of the province (Provincial Government of Laguna, 2014).

103 farmers from upland communities of Abo and Bukal and 92 farmers from lowland communities of Lagawen and Buenavista were interviewed on how they are able to manage the problems brought about by food insecurity in their family and community. Results were compared and descriptive analysis was used in probing the data.

RESULTS AND DISCUSSION

Table 1. Socio-demographic characteristics of the respondents.

Socio-demographic	Upland	Lowland
Average age of respondents	53	26
Average numbers of years residing in the community	35	27
Average household size	3.61	4.02
Average income (in Peso)	7,673.00	5,991.00

Table 2. Major occupation of the respondents.

Occupation	Upland (%)	Lowland(%)
Farmer	74	48
Farm Labourer	4	13
Driver	12	6
Business	4	12
Employed/Barangay Official	5	7
Self-employed	1	6
No response	-	7

Tables and 1 and 2 show the socio-demographic profile of the respondents. The respondents from the upland communities are generally much older compared with their lowland counterparts. Likewise it can also be noticed that more than 75% of the respondents from the upland communities work in the farm as farmers or farm labourers whereas those from the lowland communities only have 61% working in the farm. This could possibly mean that since the respondents from the lowland communities are generally younger, they tend not to work in the farms anymore and are much involved in other activities in the town proper.

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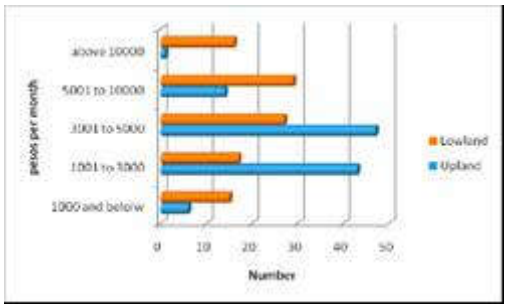

Figure 1. Monthly expenses of respondents on food

Figure 1 shows the monthly spending on food by the respondents. The respondents from the upland communities have a monthly average spending ranging from PhP1,001 to PhP5,000, while the those from the lowland have a relatively fair distribution of expenditure on food. However, it could be noticed that the respondents from the lowland communities tend to spend higher than their upland counterparts. Very few people from the upland spend more than PhP10,000 as compared with those from the lowland. One of the possible reasons for this is the presence of food outlets in the lowland communities which could not be found in the upland areas. The respondents from Abo and Bukal tend to consume the product they produce from their farms rather than purchasing food from the food outlets in the town proper. Based from the data obtained from table 2 and figure 1, upland areas are more food secure since the food are more available to them because they are more involved in farming activities. As mentioned by Pinstrup-Andersen (2009), food security is considered in a household if it has the capacity to obtain food needed by the members to be food secure.

Table 3. Number of crops planted by respondents

Number of Crops	Upland	Lowland
0	8	25
1-2	21	29
3-4	53	26
5-6	21	11
7-above	0	1

Table 3 shows the number of crops planted by the respondents. This shows that both communities are engaged in farming activities. However, it is evident that the upland communities plant more crops than their lowland counterparts, and there are even respondents from the lowland communities who do not plant crops. This further supports the concepts of food availability, food access and food utilization associated with food security. Based from the data gathered, the respondents from upland communities tend to have more access to the availability of food and likewise have the tendency to utilize the farm produce they have.

Table 4. Rating of Respondents on Food Insecurity Issues

Household Food Insecurity Questions*	Upland	Lowland
1. Did you worry that your household would not have enough food?	3.6	2.9
2. Were you or any household member not able to eat the kinds of food you preferred because of lack of resources?	3.0	2.9
3. Did you or any household member eat food that you preferred not to eat because a lack of resources to obtain other types of food?	3.3	3.1
4. Did you or any household member eat a smaller meal than you felt you needed because there was not enough food?	4.0	3.1
5. Did you or any household member go to sleep at night hungry because there was not enough food?	4.0	3.9
6. Did you or any household member go a whole day without eating anything because there was not enough food?	4.0	3.9

* Source: USAID-HFIAS)

Some questions on food insecurity were asked among the respondents. Using the Likert scale of 1-4: 4 (never hap-pened), 3 (happened once or twice),2 (happened 3-10 times), 1 (happened more than 10 times), they were asked to rate whether in the past 30 days, they have experienced such cases of food insecurity. Based on the results of the ratings given, it can be observed that the difference be-tween the communities was almost nil except for the point that lowland communities worried more that they do not have enough food to eat and that they ate a smaller portion because they did not have enough food. Otherwise, both communities did not go hungry for a whole day because of lack of food.

CONCLUSION

Based on the results of the study, the upland and lowland communities of Nagcarlan did not totally experience food insecurity. However, the upland communities had more capacity to manage the shocks and stresses brought about by food insecurity because they were able to utilize their farmlands more and were able to consume the produce that are available in their farmlands. Likewise, the gov-ernment has always been ready to provide services needed by both communities.

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Changes in food consumption of urban and rural populations in Poland

PhD Eng. Mariola Kwasek[1], PhD Eng. Agnieszka Obiedzińska[2]

***Abstract* - The purpose of this study was to analyze the changes in the level of food consumption in urban and rural households in total and by socio-economic groups from 2005 to 2012. The study included seven socioeconomic groups of households in Poland, i.e. four located in rural areas: employees, farmers, the selfemployed, retirees and pensioners and three located in city: employees, the self-employed, and retirees and pensioners. The results are the ground for the national food and health policy. The realization of this policy will help to improve the nutrition and health status of the population by reducing premature mortality from chronic non-communicable diseases, including cardiovascular diseases and cancer; reducing the number of overweight and obese; reducing health care expenditures of chronic noncommunicable diseases. It will also raise the awareness of nutrition and health education of Polish population by all population groups, including in particular children. This all will contribute to increase economic prosperity and to improve welfare of population in Poland.**

***Keywords* – dietary guidelines, food consumption, food security, urban population, rural population**

BACKGROUND AND OBJECTIVES

The level of food consumption of Polish population depends on the physical and economic availability of food. Physical availability of food is determined by agricultural production, processing, import, export and stocks of agricultural commodities and food, whereas the economic availability of food is determined by incomes of the population and food prices. Domestic agriculture has a decisive influence on the food consumption of Polish population. Its production capacity is sufficient to produce agricultural commodities and food to ensure an appropriate food for Polish population.

METHODS

The purpose of this study was to analyze the changes in the level of food consumption in urban and rural households in total and by socio-economic groups in years 2005 and 2012. The study included seven socio-economic groups of households in Poland, i.e. four located in rural areas: employees, farmers, self-employed, retirees and pensioners and three located in urban areas: employees, selfemployed, and retirees and pensioners. As an empirical material the results of the Household Budget Surveys (HBS) prepared by the Central Statistical Office (CSO) in Poland were used. The obtained results were compared with the current national and international dietary guidelines.

RESULTS

Analysis of food consumption in Poland in 2005 and 2012 showed that consumption of fruits and vegetables, fish and fish products, milk and milk products, or other products with a significant impact on human health is too small in relation to nutritional recommendations (Table. 1).

Vegetables and fruits play a very important role in human nutrition. Research shows that high and frequent consumption of fruits and vegetables (fresh, frozen, dried) and juices reduces the risk of cancer (esophagus, stomach, colon, rectum, pancreas), cardiovascular diseases, helps in the treatment of overweight and obesity and slows down the aging process (WHO, 2003). Zatoński and Janik (2003) recommend eating at least 500 grams of fruit and vegetables a day and divided in 5 servings. In 2012 the consumption of fruit and vegetables in urban households amounted to just 312 grams per day per person and was 12.4% lower than in year 2005. The consumption of fruit and vegetables in the rural areas was even lower than in the city and was 297 g (in 2005 - 335 g). The deficiency of fruits and vegetables consumption in relation to the recommended intake ranged from 19.2% in households of retirees and pensioners in the city to 46.4% in households of employees in the rural areas. Available income is the essential factor that determines the intake of fruits and vegetables.

Nutritionists recommend eating fish and fish products at least 200 g per person per week (Robertson et al., 2004). This applies mainly to marine fishes, which are a rich source of essential omega-3 polyunsaturated fatty acids, which are essential in the prevention of cardiovascular diseases. In 2012 in urban households the level of consumption of fish and fish products amounted to just 108 g per person per week (in 2005 - 110 g), and in rural areas - 95 g (in 2005 - 98 g). The deficiency of fish and fish products consumption in relation to a healthy pattern ranged from 26.0% in urban households of retirees and pensioners to 57.5% in rural households of employees. Fish, for health reasons, should be consumed in much larger quantities than today. Unfortunately, the price is a barrier restricting demand for fish despite the offered variety of products. In 2012 consumers for frozen fillets of hake had to pay 21.42 PLN per kg, what is nearly 3 times more than for disemboweled chicken (7.57 PLN). The research on the interdependence between income and consumption of food shows that the 1% growth of income may increase the demand for fish and fish products by 1,233% in one fifth of poorest households and only about 192% in one fifth of wealthiest households.

Among food products, milk and milk products have a beneficial influence on human health. These products contain easily digestible nutrients necessary for proper functioning of the body and allow to maintain in a good health (eg. calcium, proteins, B vitamins). In 2012 urban population consumed only 181 g of milk and

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milk products per day per person (in 2005 - 196 g) and in rural population - 194 g (in 2005 - 241 g). The deficiency of milk and milk products consumption in comparison to the recommended intake ranged from 60.8% in rural households of retirees and pensioners to 72.0% in urban households of employees. The level of consumption of milk and milk products in urban and rural areas is much lower than the recommendations, despite the fact that the market is a rich in wide range of high quality dairy products.

CONCLUSIONS

The analysis of food consumption in urban and rural population socio-economic groups in Poland allowed to determine how much the level of intake of fruits, vegetables, fish and fish products, milk and milk products or products that have a significant impact on human health is different from the dietary guidelines recommended by the international organizations (FAO, WHO) and Polish specialists in the field of human nutrition. In all studied socioeconomic groups the consumption of milk and dairy products was too low. Deficiency of calcium in the diet is one of the main factors of osteoporosis. At the current situation of food consumption the urban and rural populations have to take into account the serious health consequences which may result from too low intake of vegetables, fruits and fish and fish products.

Reported inequalities in the food consumption of urban and rural populations in Poland confirm the need to take steps towards changing diet of Polish people. This must rely on increased consumption of food products that have a positive effect on human health and reduced consumption of products, which in excessive amounts contribute to an increased risk of chronic non-communicable diseases. National food policy must take action towards education of Polish population in terms of food, nutrition and health and interactions between them. Nutrition and health education is an essential tool in the development of healthy eating habits and allow to maintain in a good health. This is an important step towards ensuring food security.

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Table 1. Consumption of fruits and vegetables, fish and fish products, milk and milk products per capita in terms of dietary recommendations for urban and rural households in Poland by socio-economic groups in year 2005 and 2012.

Specification	Years	Total		Households of							
				employees		farmers		selfemployed		retirees and pensioners	
		urban	rural	urban	rural	urban	rural	urban	rural	urban	rural
dietary recommendations		Fruits and vegetables 500 g per capita/day									
consumption (g/day)	2005	356	335	316	302	-	349	350	313	422	395
	2012	312	297	282	268	-	312	303	297	404	366
deficiency (%)	2005	28.8	33.0	36.8	39.6	-	30.2	30.0	37.4	15.6	21.0
	2012	37.6	40.6	43.6	46.4	-	37.6	39.4	40.6	19.2	26.8
dietary recommendations		Fish and fish products 200 g per capita/week									
consumption (g/week)	2005	110	98	97	85	-	93	110	113	148	123
	2012	108	95	95	85	-	98	110	98	148	123
deficiency (%)	2005	45.0	51.0	51.0	57.5	-	53.5	45.0	43.5	26.0	38.5
	2012	46.0	52.5	52.5	57.5	-	51.0	45.0	51.0	26.0	38.5
dietary recommendations		Milk and milk products 600 g per capita/day									
consumption (g/day)	2005	196	241	177	201	-	275	186	212	244	294
	2012	181	194	168	173	-	222	173	186	220	235
deficiency (%)	2005	67.3	59.8	70.5	66.5	-	54.2	69.0	64.7	59.3	51.0
	2012	69.8	67.7	72.0	71.2	-	63.0	71.2	69.0	63.3	60.8

Source: Own study on the basis of unpublished CSO data.

WG20 - Revolutionary solutions for local food systems

Which new (practical) solutions emerge in relation to new societal challenges?
How are they designed and organised?

In recent years practices carrying social and economic innovation through agriculture and food production have grown rapidly, both in numbers and in terms of quality and attention paid by the society. Even more modern economic sectors (like informatics or tourism) are looking with interest to these potential innovative charge coming from the primary sector.
These practices find the way for identifying and implementing solutions that, besides being economically sustainable, contribute to the social and environmental improvement of the community.
These initiatives are "revolutionary solutions", carrying real social innovation in a lot of fields, like: education to new generations on nutrition and environment (school gardens, pedagogical practices,…); environmental safeguard (biodiversity, landscape, energy, resources managing, actions against food waste, revolutionary ways for accessing/distributing food, rearrangement and closure of local cycles); governance, with modern and participated experiences (food planning, common goods management, urban-rural solutions,…); social justice paths (food access, social farming, critical consumption, poverty reduction,…); urban planning (community gardens, farmers' markets,…).
These practices are related to food production, based on both rural and urban communities' wide needs and requirements. Often involves a large number and kind of stakeholders, each with a different expertise and role as farmers, third sector, institutions, users, consumers, different forms of active citizenship.
Local food systems as well as individual practices and their impacts on the development of territories, may be analyzed by using a wide range of theoretical and methodological tools, from very different points of view, and with the contribution of various sciences and expertises, within a multidisciplinary debate, able to involve the society. Scientific debate on local food systems tried to highlight the social impacts of traditional or innovative food system organization on communities, even starting from existing practices.
However there is a strong feeling that, even for a strong dynamic of change taking place at present, in the fields there is a lot more innovation than normally encoded and debated.
We have now the need to bring out the practices that proved to be effective carriers of solutions, in order to better understand them also from different scientific view points. In this perspective, the aim of this working group is to give voice to the leading actors of the change, the ones working in the field, by selecting that practices that may deeply change the way food and farming practices are designed, organized and managed. Those carrying innovation from the point of view of markets, relations with society, environmental impact, flexible and local food choice; so to give models transferable in other contexts.
Aim of this working group is also to introduce practices in a context of international research, able to analyze and valorize them by making practices instantly more visible and easier to understand, so to facilitate their transfer in a logic of partnership between field innovators and scientists.

Specifically, contributions should address the following topics:

- *Who is the starter/engine of the innovation*
- *What the needs that stimulated the born and evolution of the innovation*
- *What kind of "revolutionary solution" you want to describe? (description of the practice)*
- *Main areas of innovation: environment, culture, education, governance, social justice, urban planning, transition, …*
- *What kind of impact (qualitative and quantitative) the innovation has on the territory/society?*
- *When did you introduced the innovation?/In which phase it's now (project, start up, maturity, consolidated)?*
- *Strengths*
- *Critical points*

- *Estimated investment required (economic, human resources, time …)*
- *Replicability*

Will be accepted abstract illustrating a revolutionary/innovative best practice in at least one of the above mentioned areas (environment, social justice, culture, transition,…). Proposed abstracts will participate at the AiCARE Revolutionary Solution – Social Innovation for Agriculture of the future Award. Will be accepted contributions from different disciplines (economic and sociological research, policy analysis,…) and from a wide range of subjects: researchers/academics, technicals and professionals, organizations, agencies/institutions in a framework of multidisciplinary and knowledge exchange.

Convenors:

Silvia Paolini, AiCARE Italian Agency for Responsible and Ethical Countryside and Agriculture, Italy
Angela Galasso, AiCARE Italian Agency for Responsible and Ethical Countryside and Agriculture, Italy
Paola Scarpellini, Pisa University, AiCARE, Italy
Francesco Di Iacovo, Pisa University, Italy

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Short Food Chains as Revolutionary Solution

T.C. Andringa, M.E. Albering, L.F. Heupink[1]

***Abstract* – We propose short food chains as a revolutionary solution and identify small-scale farmers as the revolutionaries to realize a sustainable and foodsecure future. Food chains that are too long and complex cannot be understood and its actors will create more problems than they solve. These conclusions are based on recent insights in the origin of cognition suggesting two mindsets: one for problem solving and one for co-creating a sustainable future. Only food chains that are sufficiently short and overseeable can be understood and farmed sustainably. Farmers in food chains that are too long and too complex will gradually deplete the resilience of soils, livestock, and crops, and will harm societal health.**

***Keywords* – Food chains, sustainability, resilience, coping mode, co-creation mode, understanding**

INTRODUCTION

This conference focuses on "reconnecting agriculture and food chains to societal needs". This suggests 1) that agriculture, food chains, and societal needs were connected in the past and 2) that the currentdisconnect is problematic. Indeed, this work grouptitle suggests that we need "Revolutionary solutions for local food systems". Because the term 'revolution' is based on the word 'revolve', the term 'revolutionary solution' suggests a restoration of whatused to work. This paper addresses therefore the question *"What, precisely, is it that we should restore?"*

It is not often acknowledged that a continual need for innovative solutions might be indicative of deep structural problems. Since an innovation is just a novel solution to a problem, a demand for innovation suggests that old solutions are deemed inadequate. However, if the innovation—irrespective of how clever and new it is—does not address the cause of the problem, it will not solve it. In fact it is likely to contribute to new or worse problems that require more innovations, which create new problems, require additional innovations, and so on.Innovation that does not address causes is likely to become a powerful destructive force.

In this short paper we argue that agricultural innovation of long and/or complex food chains has multiplied problems: societies need the restoration of short food chains that can be overseen and understood by the actors that maintain them. Consequently, we consider short food chains as a revolutionary solution and its farmers as the revolutionaries that realize a sustainable future.

SUSTAINABLE VERSUS INNOVATIVE FARMING

It is important to note that small-scale agriculture was the norm—in fact the only option—since its inception 10.000 years ago. Small-scale agriculture continually proved its sustainability on fields farmed for countless generations. In addition yields increased gradually, crops and livestock diversifiedand the farmers adapted to many social, climatic,ecological, technological, and political changes.

Sustainable small-scale farming is incredibly resilient: it can "absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks" (Walker, 2004). Resilience is a key property of life: healthy soils, plants, animals, and societies are highly resilient. And truly sustainable farming is characterized by high resilience. Farmers prove their sustainability by balancing all the biological, social, technological, ecological, and political influences to co-create a highly resilient and healthy environment. As such they prove to be good stewards of their inherited fields.

Less than a century ago the innovations of the green revolution increased farm productivity. This sudden productivity increase let to more produce than could be consumed locally. This sparked changes such as a rapid increase in global food-trade, the rise of industrial food processing, and the emergence of supermarkets to sell the food industry's products.

Without fully realizing it, many farmers lost their centuries long intimate relation with the local community; instead of producing food to satisfy the demands of their local customers they started to produce according to the precisely formulated and standardized demands of the food-industry. Banks facilitated innovation processes by providing financial incentives to every farmer that wanted to increase productivity, which disconnected them even more from the local community and local needs.

These changes entailed that the farmers that choose to become part of this system stopped optimizing resilience and focused instead on a single goal: increasing productivity according to the demands of the long and complex food chain of the now global food industry. Inevitably soils, plants, animals, and societies became less healthy.

FARMING WITH AND WITHOUT UNDERSTANDING

This change corresponds to a mindset change in the farmer: a transition between two modes of cognition that are as old as life itself:

> *The first mode is governed by "the norms of the agent's continued existence" and corresponds to what we will refer to as the 'coping mode of cognition' because it is aimed at the satisfaction of— pressing—'deficiency needs.' The second mode of cognition is aimed at preventing pressing needs, while being "governed by the norms of the agent's flourishing," and will be referred to as the 'co-creation mode of cognition'. (Andringa, 2015, page 4)*

The coping mode allows focusing on the problems at hand and to solve, control, or suppress them effectively. Its key property is 'intelligence', which is suitable to deal with specific pressing problems, but at the cost of not immediately apparent side effects. This is the mode of the long food chain farmer because of

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his single-minded focus on productivity and his inability to oversee and understand the complex agribusiness system he is part of.

The co-creation mode on the other hand takes the long term as well as an extended spatial environment into account and allows pervasive optimization through continual participation and adaptation. This mode of thought is associated with the conceptsof 'understanding' and 'wisdom' and could also be referred to a the pervasive optimization mode or the sustainable mode of the short food chain farmer.

Table 1. The characteristic properties of the coping and the co-creation mode.

Coping mode	Co-creation mode
Intelligence	Understanding
Power	Wisdom
Problem solving & surviving	Sustainability & thriving
Uniformity	Diversity
Standardization & innovation	Flexible adaptation
Fragility and disease	Resilience and health
Focused optimization	Balancing needs
Short-term benefits/solutions	Long-term dynamic stability

The coping mode is not intended as the default mode: it exists to solve pressing problems so that the co-creation mode can take over again. Yet if the problem solving of the coping mode creates as manyproblems (side-effects) as it solves, the coping modetraps itself in an endless cycle of problems, inadequate solutions, more problems, new inadequatesolutions, even more problems, etcetera. The wayout of this death-spiral starts with the acknowledgment of insufficient understanding about how one'sactions work out. In such a situation, one needs tobreak radically with these practices and to return tosimpler ways of working that can be understood. Unfortunately, few individuals in the coping mode have this reflective ability.

In the case of unsustainable farming we need toreturn to short, overseeable, and understandable food systems. Sustainability, health, and resilience of soils, livestock, plants, and societies are themeasures of whether we understand our food system. Conversely poor soils, livestock on the verge of illness, plants that needs to be protected by pesticides and herbicides, and unhealthy societiesdemonstrate that the actors in the food chain insufficiently understand what harm they are inflicting.

CONCLUSION

We started this paper with the question what precisely we need to restore. The answer is that we need to restore food chains that are short enough to be understood by local farmers so that they can restore and protect the resilience of every facet of the chain. Food chains that are too long and too complex to be understood, lead to reduced resilienceand unsustainable practices because the actors in the chain—farmers, industrialists, wholesalers, or scientists—can, and in practice do, unwittingly produce, problems for the other actors and the world at large. To conclude: sustainable food chains should never be longer or more complex than its actors can oversee and understand.

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Table 2: Characteristics of farming without and with understanding

Food chain	Long and/or complex, insufficiently understood	Short, sufficiently understood
Actors	Large-scale industrial farming	Socioecologically embedded farmers
Understanding	No one really understands and oversees all aspects of the food chain. Understanding is topical, isolated, and not shared	Farmers have a deep, pervasive, and shared understanding of their land, its socioeconomic context, and what it needs to remain resilient
Mindset	Coping mode: concerned with control, standardization, proper role-fulfillment, optimization without considering most side-effects	Co-creation mode: concerned with pervasive optimization of all aspects of the local environment on multiple time-scales,
Stable situation	Trapped in an endless cycle of problem solving (innovation) - adverse side-effects - more innovation - more side-effects	Thriving socioecological situation, with very high resilience through continual adaptation to a developing environment.
Optimization	Topical: productivity, profits, competitive advantage, use of agricultural subsidies, best practices, standard quality, on-time delivery	Pervasive: all aspects of the farm and its socioeconomic and ecological environment are regularly targeted and optimized in context
Structural outcomes	Fragile situations of low health and low resilience resulting from acts of short-sighted rationality.	Thriving environments characterized by resilience and health, resulting from experience-based rationality

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Crisis as a challenge to create new economic and social value for rural communities: the experience of social farming promoted by Coldiretti Torino and Diaconia Valdese

S. Fumagalli, S. Pigoni[1]

***Abstract* – The Social Farming is a set of activities that use the agricultural and animal husbandry resources, the presence of little groups, familiar and non-familiar, who work in the farms, in order to promote, in synergy with competent bodies, therapeutic actions, rehabilitation, empowerment, social and working inclusion, leisure activities, useful services in everyday life and education. In this framework Coldiretti Torino and Diaconia Valdese developed a process of recognition and promotion of the Social Farming practices, construction and strengthening of the local actors network and definition of a local governance system.**

***Keywords* – Social Farming, Civil Economy, Social Innovation.**

INTRODUCTION AND TOPIC

In today's society, the creation and spread of value is dramatically changing, due to the geographical relocation of the economy, the concentration of the economical leverages in few hands, the increasing lack of natural resources and the growth of global population.

The production models are leading to a gradual separation of the economy from the society, the culture and the local identities, reducing the national solidarity and bringing about the breakup of the intergenerational equity, social justice and territorial cohesion agreements. The first victims of these processes are the traditional beneficiaries of the redistribution policy; on one side the most isolatedand vulnerable territories, on the other the personswith low bargaining opportunities. Only the capacityto mobilize new resources, both tangible and intangible assets, will enable to achieve a new sharedvalue creation, a more efficient answer to the realneeds and a better social security.

The Social Farming (SF) is a set of activities that use the agricultural and animal husbandry resources, the presence of little groups, familiar and non-familiar, who work in the farms, in order to promote, in synergy with competent bodies, therapeutic actions, rehabilitation, empowerment, socialand working inclusion, leisure activities, useful services in everyday life and education.

The SF acts an important role in the agricultural and rural development from two different points of view:

1) it assumes a multi-functional vision of agriculture by connecting the production processes management with the creation of services and welfare for the people involved;

2) it contributes to the development paths in the rural areas, strengthening the network of available services to the local population, increasing the farms' reputation and the capacities to operate in networks with new subjects, improving the visibility of their offer and diversifying the income opportunities, enhancing the entry of new subjects in themanagement of innovative economic activities.

The SF links the agricultural, social, labor, training, health and justice policies. It enhancing the passage from a re-distributive welfare to a generative welfare, where the co-production is the new culture in the creation of the services for the people: the conception, implementation and evaluation of the service should be the result of a collaborative process in which the beneficiaries contribute at its production.

In this framework Coldiretti Torino started in 2003 a process of recognition and promotion of the Social Farming practices, construction and strengthening of the local actors network and definition of a local governance system.

PROCESS OF RECOGNITION AND PROMOTION OF SOCIAL FARMING PRACTICES

The first actions (2003) concerned specific services (es. agro kindergarten), realized by the farms, with the local municipality, in order to diversify and support the farmer's income.

The cooperation between private farms, private social service providers (social cooperatives and private no-profit organizations) public service providers and public employment services strengthen through innovative co-training and co-project planning activities.

One first opportunity is the participation of Coldiretti Torino at a project for women victims of human trafficking, led by the government department for the Equal Opportunities in Turin: some people start to work in the farms with an internship, to be hired in a second time directly paid by enterprises.

In 2008 the government labor department of the Province of Turin introduced within the calls "Regional Fund for People with Disabilities" the codesigning with farms projects for the employment of people with disabilities. About 40 farms and cooperative started together with social service providers, paths of employment integration, lot of which became real hiring opportunities.

In 2012 Coldiretti activated a protocol with the City of Turin Immigration Office, in order to launch integration employment paths for refugees. In 90% of cases, at the end of the internship, people were hired.

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Alongside with social and work inclusion of vulnerable persons Coldiretti Torino planed - with the farms - services for the population: fostering, daily or in families, for people with mental disabilities, cotherapy workshops with plants, animals and more.

From 2012 Coldiretti Torino launched a cooperation with Diaconia Valdese (No-Profit Organization) starting projects of youth agricultural entrepreneurship with a social calling in a mountain rural area.

The first start up, after which two more will follow, allowed to create a farm, supported in the design of social and work inclusion practices of vulnerable persons (until today: 6 persons involved). Diaconia Valdese mobilized for this aim internal economic and material resources (farmland).

Last but not least in 2013 Coldiretti Torino in partnership with Consulta per le Persone in Difficoltà (No-Profit Organization) developed a project titled "Agriable" funded by Piedmont Region (European Social Fund). 18 farms and farmers involved in training activities and structures upgrading to ensure accessibility for people with special needs and employment integration for disabled people.

THE LOCAL GOVERNANCE

Coldiretti Torino took the lead to promote the debate on SF at local level. The following are some milestones of the whole process.

Technical meetings took place between the Province of Turin, Local health and social assistance Services, Public employment services besides with local municipalities, while the number of persons interested in the theme keeps growing and new actors and stakeholders enter the network.

To foster the cooperation between all local actors, 7 meetings - in different sub local areas of the province of Turin - were organized using the word cafe methodology. Those meetings created the opportunity for farmers, social service providers, public employment services, municipalities, etc. to know each other and network their different experiences and needs.

To support new SF practices, farms are supported to cooperate in networks with the third sector and the whole development process is coordinated by a "permanent experimentation lab" (Living Lab) established by Coldiretti Torino, Diaconia Valdese and University of Pisa.

The project "Terrabilità" (Fund by a Bank Foundation) that involved 8 farms and agricultural and social cooperatives, associations besides Coldiretti and Diaconia Valdese for the realization of a path for the recognition of achieved competences of disabled people in the agricultural work has been the starting point for networking and governance activities. From this experience a working platform aroused, established by the Metropolitan City of Turin (labor, vocational training and social departments), Piedmont Region (social and labor departments), Diaconia Valdese, Coldiretti Torino, ADN (Association Denied Rights) with the aim to support the experimentation of "Terrabilità" project, defining the theoretical path and transfer the most interesting results in the standard policies of the involved public and private bodies.

RESULTS

Altogether, nowadays, the network involves 74 actors between enterprises and farms (47), social cooperatives (8), associations (13), social public services (12), public health services (3) organizations and public bodies (14), other private bodies (2).

The activities accomplished within the Social Farming network – excluding then the activities and the budgets of public bodies but also those of associations and social cooperatives for their ordinary activities - highlights a production of economic agroindustrial value around three millions of euro. Concerning the direct creation of social value achieved in the Social Farming practices, in five year of activities 28 enduring recruitments, 9 temporary jobs, 200 internships, trainings, and other way of connections with services, 500 between educative services and parents support services.

A governance process on SF, at regional level, has been established and public and private actors are now co-designing the future practices, policies and funding of a rural generative welfare.

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"Garden of Knowledge" - Strategic Project to Support Low Income Families, Braga, Pt

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***Abstract* – In a context of high unemployment and low educational qualifications urban gardens can play an important role. The Portuguese Red Cross – Braga Delegation, through its Community Centre in Vila de Prado (CCVP), proposed the creation of a community garden as a way to contribute to social integration of low income and socially stigmatized families. The purpose of this study was to develop this project based on the characteristics and expectations of the beneficiary families, including a technical project for organic horticultural production; the community garden organization, resources and promotion; the educational/training plan; cultural and educational activities for the community to support project integration; and the social impact assessment. The methodology included monitoring the application process; analysis of the agronomic potential of the site; understanding the community interconnections; assessing other social and community urban garden projects and interviews. The project was named "Garden of Knowledge" and included 16 family plots (200 m²/plot) and a training course on organic farming (200 h). A great motivation, commitment and willingness to participate were attained. The opportunity for social integration through the increase of families' self-esteem, well-being and better health improved by food quality was achieved. By bringing together several synergies this garden led to a better community's quality of life and environment.**

***Keywords* – organic production, education/training, social benefits, social inclusion, sustainability.**

INTRODUCTION

Urban gardens can play an important role for the well-being of citizens, supporting better nutrition and health of populations, environmental awareness, conservation of natural resources and of the biodiversity (FAO, 2010; Wiskerke, 2012). These gardens may have educational, cultural and social purposes, enabling work and income for disadvantaged social groups, reducing poverty and fostering entrepreneurship, particularly among unemployed, homeless, the elderly and disabled people (Milligan, 2004). This can be included in the broad concept of Social Agriculture, that can assume other strategies as for example in the form of private enterprises, in which social farming is a way to diversify income sources by providing a social service to the community and continuing subject to market forces (Di Iacovo and O'Connor, 2009).

On the bank of the river Cávado in Vila Verde, Braga, Portugal, for several decades there were about 2 hectares of abandoned public land, with tree-shrub vegetation, not safe and used as a household waste deposit. However, considering the beautiful scenery that the river side provides throughout the year, this site showed a great potential for leisure or many others purposes. In 2013 about 1 ha of this land was approved to become a community garden, promoted by the Portuguese Red Cross - Braga Delegation, through its Community Centre in Vila de Prado (CCVP), as a way to help local families from economic disadvantage and social exclusion, situation caused mainly by high and long-term unemployment, as well as low professional and educational qualifications.

The purpose of this study was to develop this community garden project, based on the characteristics and expectations of the beneficiary families, including: (i) the technical project for organic horticultural production; (ii) the community garden organization, resources and promotion; (iii) an educational/training plan to promote knowledge and potential professional integration; (iv) a plan of activities for the community to support project integration; (v) the evaluation of the project impact on the beneficiary families, particularly in terms of improving social integration and relationships.

METHODOLOGY

The characteristics and perspectives of the beneficiary families were studied by monitoring the application process to the community garden. The site was surveyed and the water and soil analysis were carried out. Public and private institutions as well as neighbours were contacted for collaboration, and study visits to other community garden projects were organised. For assessing the social impact on the beneficiary families, three technicians of the CCVP connected to the project (social workers and psychologist) were interviewed.

RESULTS - PROJECT IMPLEMENTATION

The project was named "Garden of Knowledge" (Horta do Saber), aiming to combine the clients training to their learning capacity throughout life. Documents such as application forms, participation contracts and operating handbook were produced. The garden's layout project was run by the organic production system and included plots for 16 families (200 m²/plot), a greenhouse, an orchard, a composting unit, educational and leisure zones (Fig. 1).

The agricultural technical strategy included soil correction and organic amendments, the organization of the composting unit, the irrigation system, the crop rotation programme and the implementation of the field note book. A training scheme was prepared to provide skills to the clients, including study visits to organic farms and community garden projects, workshops and a training course in organic farming of 200 hours.

The project marketing included a project leaflet, a national television documentary and interviews to local social communication. A plan of activities was

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performed as a strategy to promote interaction leading to community commitment to the project. This plan included cultural activities, environmental and diet education, targeting everyone within the community, the public schools, people with special needs and the beneficiary families.

Figure 1. Layout of the "Garden of Knowledge" project including plots for 16 families (200 m²/plot), a greenhouse, an orchard, a composting unit, educational and leisure zones.

DISCUSSION AND CONCLUSIONS

Community gardens can be considered not only as a crop field to obtain food and economic benefits but can contribute to solve social needs. A holistic approach with the participation of a multidisciplinary team work is essential in social assistance and educational, psychology and agronomy fields as proven by other projects (Sempik and Aldridge, 2006; Thrive, 2009).

Interviews done to the technicians, professionals with vast experience dealing with the clients families, proven that the impact of the "Garden of Knowledge" on these families has given them a great sense of motivation, commitment and willingness to participate, improving their social relations with the local community. The project by stimulating the families' skills and self-esteem, by providing training, creating duties and stimulating their compliance to schedules, as well as promoting environmental awareness and teamwork, has showed a great opportunity towards social insertion.

The technical strategy aimed to be maximized in its structure, organization and individual space sizes to allow the maximum production of food for the families as well as to help the family income by selling their surplus. On the other hand, the implementation of the organic system guaranteed a greater conservation of natural resources and improved food quality by giving variety of food free from synthetic chemical products. Other health benefits include outdoors physical exercise, improvement of general well-being and quality of life (Elings, 2006; Wakefield et al., 2007; Maller et al, 2008; Mandela, 2008).

The abandoned initial space with such a landscape potential, is now a multifunctional and inclusive park, serving a part of the community before stigmatized, rescuing them by giving back a sense of security, dynamic and beauty that the project itself was able to give to the entire local community. Assiduously the community started using the surrounding areas for sightseeing and outdoor activities, in family or friends groups.

The Garden of Knowledge is an intelligent park and an innovative project with a sustainable proposal, which brings together several synergies, leading to a better community's quality of life and to a better environment.

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La Nuova Arca: a new model of community life and civic agriculture

S. Carbone, G. Crisci, M. Fonte[1]

***Abstract* – This paper reports the experience of a family home that has expanded its vision by inserting an agricultural co-operative as a sideline to encourage the activity of the home. This new farm involve disadvantaged workers to enter the labor market and, in some cases, the volunteer work of the mothers hosted in the family home. Within a few years the family home has expanded its network becoming a permanent agricultural and social laboratory to experiment innovative and sustainable practices. In this spirit, with his agricultural declination, the family home supplies more than 200 consumers of fresh vegetables and represent an alternative food distribution model for the city of Rome.**

***Keywords* – Solidarity economy, family house, GAS movement, Rome, Community supported agriculture.**

INTRODUCTION

The city of Rome is going through a period of reorganization of its food supply chain, after which other cities such as Pisa and Milan, have addressed the issue of the sustainability of their chain. Among these issues arise the role played by social co-operatives, which aim at inserts disadvantaged people in the labor market. Among these, there are forms of social agriculture and co-production that are gaining interests from the scientific community and potentially represent a sustainable solution for the food supply in urban areas. Hence the experience of La Nuova Arca (LNA; in English: The New Ark), which is a useful case studies to discover how a family home has expanded its range of knowledge by starting a social laboratory of agricultural experimentation, coproduction and distribution.

THE STORY OF THE CO-OPERATIVE

La Nuova Arca was born in 2007 in pursue of the common good through the establishment of a small community of families, which aims to the social inclusion of vulnerable groups of population: single mothers and children in need, migrants, refugees. Hospitality to mothers and children in needs was the starting point of this experience that rapidly evolved to include the experimentation of new forms of housing and new models of production and social relationships.

This activity was called "The Tent of Abraham" with the aim of creating a family home, along the business initiatives that could come to the aid of those families. The "Tent", in the imagination of the co-operative, is a place of rest and refreshment for the traveler before to leave. Helping people to "stand up", with all that this symbolism means, is their purpose.

After some years, the co-operative believed that welcome in the family home was not enough: it was necessary to arise a number of initiatives, in nature and character quite different, that would help people to face their future, also on a professional level and working.

Then, the co-operative has triggered the initiative "Solidarity Agriculture" on an area adjacent to the house, to provide jobs and a small income for the people of the community, without compromising maternal care in the first months of a child's life.

The agricultural aspect was introduced, in current mode, in 2013, after a first phase of experimentation on a small scale. The agricultural co-operative was born within the family home and offers organic fruit and vegetables at a fair price, achieved through the employment of disadvantaged people, offering them a fair income and allocating resources to support other solidarity activities.

"The choice of the organic, without the use of pesticides and chemical fertilizers, is based on awareness and respect for environment, people and animals.. This project created a supportive network of consumers, job placement and social inclusion of vulnerable young people. Under the supervision of specialists, some of them have now entered successfully to the labour market".

CONSOLIDATION PHASE

Nowadays, the agricultural activity is a central part of this project. The co-operative works at the moment three hectares of land, which should be extended to four so as to facilitate the necessaries rotations. Annual agricultural gross revenue is of about 120,000 Euro, of which 60% derives from the internal production, while the remaining part is attributable to the selling of products from other farms, mainly in the territory, but also far away, as the in the case of citrus from Sicily or other Southern regions.

His most important point of innovation is the experimentation of an economic model that accords centrality to the construction of networks of social relationships. The farm, involving since the outset

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some Solidarity Purchasing Groups (GAS), has quickly strengthen its activity, in direct relationship with the them, which in 12 months grew rapidly in number, from 5 to 30, allowing the consolidation of the farm and the involvement in the work of mothers living in the community, some immigrants and other workers. Skills related to agricultural production processes and activities of distribution and packaging grew rapidly.

La Nuova Arca quickly became a reference and an aggregation point for the other farms operating in the same territory, as well as a reference for a large number of GAS, especially in the coordination and management of the orders of non-local products, such as citrus fruits and detergents. One of the most original projects is Deterspilliamo, which consists in the on-tap dispensing of eco-friendly detergents produced by a firm originated from the experience of the Ethical Purchasing Group of Rimini, in the North of Italy. Re-use of packages is encouraged, while mothers of the family home are also involved in the project.

AN EVOLVING LABORATORY

In parallel, the co-operative has initiated and implemented the project "Responsible Image", for professional development of photographic images and also the project "Craft solidarity" for the production of household items and wedding objects, an activity compatible with the maternity and child care.

Other activities connected to agriculture are related to:

a. Organize several activities for vulnerable children through a training program to learn agricultural practices developed in collaboration with the municipality and other partner of the 'social area (12 minors were involved during the current year).

b. Entertainment and catering activities incurred thanks to the intervention of volunteer resources, that gave an additional economic support in donations computable in around 15,000 euros per year.

c. Activities of working inclusion in the network of related companies. In 2014 the work-wise people placed 8 people in several companies.

d. Development of a local community, sensitive to the proposals and activities of solidarity agriculture project. The community consists of a network of about 400 families.

3. The laboratory of social agriculture relies on the contribution of 10 people, with different role: coordination, agronomic advice, administration, logistics, manufacturing, commercial, educational, communicational and social network development. The resources are funded for the 80% from the agricultural receipts and for the 20% from social and educational activities.

4. People hosted in the community, for at least 18 months were 63 in the past 5 years.

Furthermore, common initiatives with other farms of the IX Municipality of Rome have also led to the mobilization of local actors for the defense of the territory, threatened by the opening of a landfill at Falcognana, after the closing of Malagrotta. Collective action, supported by the IX Municipality of Rome, was also directed to the creation of a municipal brand (DOM: municipal designation of origin), aimed at promoting local products and local farms that produce with sustainable practices.

CONCLUSIONS

In short, the experience of La Nuova Arca is a great experimental laboratory that aims to contribute to the change of the agro-system of the city of Rome and the lifestyles of the roman people. finally, agriculture activity has become an important part of the social and economic life of the community and an important link for the construction of solidarity and co-operative social relationships.

ACKNOWLEDGEMENT

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Multifunctionality in a vegetable garden

Lucasimone N. Kogoj, Martina Perugini, Jacopo Facchi, Francesca Massetani, Enrico M. Lodolini, Federica Giaccaglia, Ludovica Lancianese, Davide Neri, Rodolfo Santilocchi[1]

***Abstract* – Activities to add value to crop productions and enhance the development of agricultural sector in the urbanizing regions were developed in a farm vegetable garden in Ancona (Italy). A self-service vegetable garden was designed and established in order to reduce the distance between food production and consumption. The vegetable garden was equipped with a glasshouse used to implement didactical, recreational and social natural themed activities dedicated to children and families. A pedagogic project, called "Summer in the countryside", was activated in the same year offering summer weekly educational and ludicmodules for children in the agricultural environment andusing the vegetable garden as an open classroom. Moreover, acare farming project called "Evergreen" was carried outfor over-65-year-old seniors with the objective to diffuse knowledge of vegetable self-production techniques, promote cultural exchange and evaluate the benefits of motor and cognitive activities held in the countryside. The implementedactivities allowed the farm to diversify the range of offered services and to improve visibility among customers. The number of participants to educational activities increased over time. The "vegetable garden" environment proved to be an effective location to host didactical, educational, recreational and therapeutic activities and to fulfil the multifunction objectives.**

***Keywords* – children,didactical activities,elderly, family, farm, recreational activities, social activities.**

INTRODUCTION

Farm multifunctionality (Van Huylenbroecket al., 2007) represents one of the pivotal factors to add value to crop productions and enhance the development of agricultural sector in the urbanizing regions. Projects to bringcustomers closer to food production areas and didactical, social and recreational activities(Barbieri and Valdivia, 2010) may diversify the services provided by the farms.The need of awareness about food production stimulated the develop-ment of projects addressed to different population groups (children, adults and seniors) in order to train new generations on environment and food production issues and promote the interaction between generations, since respect for nature grow from experience as a child (Keys et al., 2013).

MATERIALS AND METHODS: THE PROJECTS

Innovative enhancement activities were developed by H.O.R.T. company in a farm in Ancona (Italy) on a plot (1500 m2) cultivated as vegetable garden.

Self-service garden

A self-service vegetable garden was designed and established in 2011 as pilot project (not replicated, yet). The project intended to allow citizens to handpick their own fresh vegetables. The vegetable garden was equipped with a drip-irrigation system,a glasshouse for visitor's reception and labels to identify the plant genotype. The glasshouse was used as crucial centre to implement several didactical, rec-reational and social natural themed activities dedicated to children and families.

Summer in the countryside

In the same area, a pedagogic project, called "Summer in the countryside", was activated since 2011 and replicated in the following years. The project intended to promote children to become more confidentwith natural environment, plant growth and vegetable food production. During the school vacation, weekly educational and ludicmodules in the agricultural environment were offered for 4-11 years old children.The modules were focused on five main themes: adventure (plants and natural materials to build wild encampment), learning (vegetable and countryside as teaching tools of English language), natural environment (observation of the biodiversity), horticulture (practical learning on vegetable growing), and recreation (game and theatre with natural objects).In every activity, the vegetable garden was pivotal and used as an open classroom.The natural environment served as source of materials to be used by children to experiment, learn and amuse, modelling toys with their own hands. At the end of the modules, a sample of 15 parents was asked to evaluate the experience.

Evergreen

The care farming"Evergreen" project was established in 2015. It was dedicated to over-65-year-old seniors andimplemented to improve the quality of life, encourage relational services, evaluate the benefits of activities held in the countryside, enhance the knowledge and the diffusion of vegetable self-production techniques and promote the pass down from one generation to another through cultural exchange. The project was composed of two social sessions: "Senses awakening"and "Countryside for everybody". In the first one(20 meetings), elderly people was involved in practical activities, related to the care and maintenance of vegetables, and in exercises for the mind to improve the mnesic performances and promote the recall of emotionally pleasant experiences. The plants were grown in an aboveground garden in order to facilitate the movements. In the second session, people was

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provided with horticulture lessons and a plot was made available for each one to cultivate vegetables.The project was carried in collaboration with INRCA Scientific Institute (Ancona),providing specialized staffto supervise the health conditions of the beneficiaries, and the senior centre of the "Amore e Vita"companyproviding guests andpsychologists.

RESULTS

Self-service garden

The self-service vegetable garden was active for 4 months (June-September), produced 18 types of vegetables and around 900 kg of products were sold. Other activitiesheld in the glasshouse involved around 100 people.The investment for the farm consisted of the glasshouse and the establishment of the garden with irrigation system. The costs were partially refunded through the vegetables sale.Further, the garden promoted the knowledge about the food sources and showed how the plants look like and where they grow.Customers were encouraged to pick the vegetables at the right maturation stage in order to enjoy the full taste and flavour.

Summer in the countryside

The project is well consolidated and 44 weekly modules were activated. The number of participants increased over time (Fig.1):about 190 children were involved during 4 years and relationship between their families and the farmwas implemented.Both male (47.2%) and female (52.8%) children (age: 7.2 ± 1.9years, mean ± SD) took part in the modules.The children participation was mainly oriented to adventure, learning and horticulture (24.8%, 23.9% and 22.4% respectively) modules.Parents appreciated the project: 86.7% declared the intentionto enjoy again of theactivities in future and 73% of them affirmed that they chose the service to introduce nature and countryside to their children. The choice of the modules was made 50% according to the theme and 50% to the timing; 60% of familiespreferred the adventure modules and 53.3% also appreciated the other themes. The project resulted economically sustainable: families paid the modulesto the activities provider that consequently paid the farm owner for the rent portion of the farm.

Evergreen

Eleven women (age: 88.3 ± 6.3years, mean ± SD) participated in the first session of the "Evergreen" project, and an average of seven people joined all the meetings. Eleven men (age: 76.6± 5.9years, mean ± SD) participated in the second session and started cultivating the parcels.Around 165 hours of labour were required to manage the garden and supportthe seniors. Meeting between seniors and children (from the summer project) occurred and promoted sharing of experiences and knowledge.

DISCUSSION AND CONCLUSIONS

The "vegetable garden" environment proved to be an effective location to host didactical, educational, recreational and therapeutic activities and to fulfil the multifunction objectives.Adventurous activities confirmed to bevery effective to introduce children to nature (Keys et al., 2013) and to plants, vegetables and food knowledge. The participation to the pilot projects for adult and elderly people encourages the development of similar projects. The pro-posed activities are replicable in other farms involving specialized staff dedicated to recreation, education and care.The projects allowed the farm to diversify the range of offered services and to improve visibility among customers.

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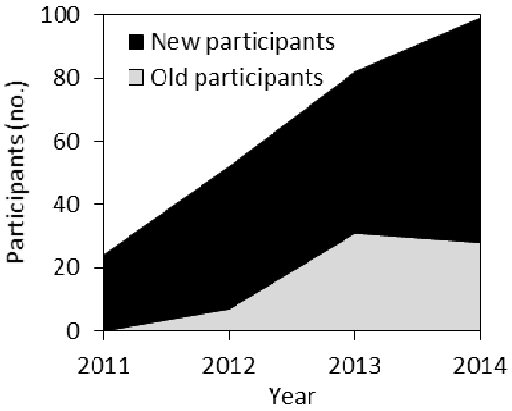

Figure 1. Annual participants of "Summer in the country-side" project.

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Barikamà: resistance trough food

S. Diara, G. Crisci, M. Fonte[1]

***Abstract* – This paper reports the experience of a group of migrants from Sub-Saharan Africa, who after crossing the Mediterranean and working as labourers in the citrus plantations of Calabria, arrived to Rome and thanks to the support of farmers and citizens belonging to the GAS (Solidarity Purchasing Groups) movement funded a Social Co-operative for the production and direct selling of yogurt and vegetable. Barikamà is the result of solidarity action within the community of the GAS movement, an example of a new type of relation that extends the capabilities of his members and creates jobs, through the direct production and sale of organic food.**

***Keywords* – Solidarity economy, migrants, GAS movement, Rome.**

INTRODUCTION

Because of its geographical position, Italy has a crucial role in the integration of migrants in the labor force. If, at national level and especially in these days, inefficiencies in the capacity of the State to guarantee social integration to migrants are clear, the network of solidarity economy and local food movement seems to be responding well to the challenge. It is one of the Solidarity Purchasing Groups' (GAS) goals to build a new economy based on ethical and environmental values and solidarity in social relations. The coherence of the GAS movement has been put to test in the experience of Suleman, Aboubakar, Sidiki, Modibo, Ismael, Moussa, that we are reporting here below.

BIRTH OF BARIKAMÀ

Barikamà was constituted in 2011 as "Social Promotion Association", aiming to facilitate the social integration of a group of migrants from Sub-Saharan Africa.

In 2010 Suleman, Aboubakar, Sidiki, Modibo, Ismael, Moussa and others were living in Rosarno, Calabria, working as braceros in the plantations of oranges and mandarins of that area, in conditions that many defined as 'subhuman'. In January of that year a racist attack triggered off a riot of the immigrants against racism and exploitation of working conditions. Escaping from the difficult climate created after that riots, Suleman and his friends arrived in Rome. In the train station, where still today often immigrants waiting for a more stable accommodation are housed, they were approached by young people of the Centro Sociale ex-Snia, connected to the GAS movement: from this encounter Barikamà was born. Barikamà means *'resistance'* in Bambara language, spoken in Mali, Senegal and Burkina Faso.

Under the advice and with the support of people, both consumers and farmers, from the GAS movement in Rome, they started learning Italian and new skills. They started producing yogurt as a way to gain a small income. But of course it was difficult to commercialize a food product that had no hygiene or other sanitary certification. At the beginning it was only sold informally to some of the GAS members who knew and trusted them. In order to show how homemade yogurt was produced and gain trust and support, Barikamà members organised several meeting and encounters with the GAS operating in Rome.

After a while, the community of GAS encouraged Suleman and his friends to grow and formalize their entrepreneurial activity. The support of the Casale di Martignano a certified organic farm and cheese factory, located near the Bracciano lake, in the nearby of Rome, was very important in this first stage of development.

CONSOLIDATION OF BARIKAMÀ

Until 2014 Barikamà was too small to think of starting an enterprise. In 2014, in order to participate to a public regional competition for projects in the social economy, members of Barikamà decided to turned into a 'type B' Social Cooperative. Barikamà won and obtained funds for 20,000 euros. With that fund its members could buy fridges and better equipment for the yogurt production; buy bicycles and an electric scooter for its delivery.

Already before materially receiving the funds, the cooperative needed some financial resources to start the enterprise. Members of the coop felt quite confident on the GAS community support to launch through Internet a crow-funding call of 20,000 euro: in few months 26,000 thousand Euro were raised.

To fulfil any sanitary requirements, in 2014, Barikamà strengthened its agreement and collaboration with the certified organic agro-tourism and cheese factory Casale di Martignano, where yogurt was and is still produced. In collaboration with this farm, they soon diversified their activity and started the production of organic vegetables.

Even today their yogurt is not certified as organic, but it is sold as a product "made from organic milk". Thanks to the close relations to the consumers who buy their product through the GAS, Barikamà does not think an organic certification is necessary. Quite often customers go and visit the place of production, the

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Casale di Martignano, which is located in a very beautiful place and well known to GAS in Rome.

ACHIEVEMENTS

"We were two, now we are 8; we were producing 15 litres of yogurt per week, now we produce more than 150 litres."

Nowadays, Barikamà offers work possibilities not only to migrants but also to disadvantaged Italians people. A "type B" Social Co-operative is characterized for offering social and working integration to "disadvantaged people". But according to the Italian law (art. 4 law n. 381/1991), immigrants with no fixed abode, income, and without any formal education are not considered "disadvantaged people". Then Barikamà decided to integrate in their activity also people with physical and psychiatric disability. Two young Italians suffering with Asperger syndrome work side by side with Suleman, Aboubakar, Sidiki, Modibo, Ismael and Moussa.

All of them works with a scoring system that allows those who work more to earn more, according also to the difficulty of the task. As an example of successful completion of their objectives, some of them found a long-term job in two restaurants that are still collaborating with the Co-operative. Today, Barikamà produces about 7000 litres of yogurt per year and distribute directly to Roman families vegetables and products of the Casale di Martignano farm to GAS, farmer's market and individual families.

Every weekend they participate to organic, farmers' and terra/Terra markets. They deliver their yogurt to more than 30 GAS in Rome and its province. Individual families through an sms can also place order for yogurt.

Barikamà manage an Internet website and its members are very proud because ''People say hello to us when they meet us. We are very proud of our project, to be able to tell our story at the stall in the markets, to go delivery our yogurt in the different neighbourhoods of Rome and hear people saying that our yogurt is very good."

FINAL CONSIDERATIONS

Thanks to the support of the Gas movement in Rome, Barikamà is now a consolidated economic and social reality. Barikamà allows its members to gain self-confidence and satisfaction in a working experience, creates networks of social relations and new opportunities for both Italians and Africans who work together in a context of respect for their different cultures. The Barikamà dream is to be of example and inspiration to the many migrants who arrive in Italy in these days and to be able to help them. Its critical point is the low income can yet generate and guarantee. The experience needs to be further consolidated through the support of a favourable institutional context.

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The Food Council of Pisa

Adanella Rossi, Laura Fastelli, Silvia Innocenti, Francesca Bretzel[1]

***Abstract* – The need for a transition to more sustainable food systems has made the definition of more integrated and advanced forms of management of food-related issues increasingly urgent, especially in the urban contexts. As for many other cities around the world, also in the territory of Pisa (Tuscany, Italy), since 2010 a process aimed at developing an integrated food strategy has been promoted (the Food Plan of the province of Pisa). In the context of new reflexivity and mobilization created by the process for the definition and implementation of the Plan, in 2013 a group of citizens, researchers and professionals established the Food Council of Pisa, an organization aimed at stimulating a reflection on the food-related issues at urban level and at promoting an integrated approach to their management. The Council started to operate identifying some specific areas of action, establishing relationships with the various initiatives carried out by local civil society, and trying to interact with public administrations.**

***Keywords* – Food Policy Councils, Urban Food Strategies, Food governance.**

INTRODUCTION

The acknowledged need for a transition to more sustainable food systems has made the definition of more integrated and advanced forms of management of food-related issues increasingly urgent, especially in the urban contexts. As for many other cities around the world, also the territory of Pisa (Tuscany, Italy) since 2010 has been interested by a process aimed at developing an integrated food strategy (the *Food Plan of the province of Pisa*).

The development of the initiative was supported by an agreement between the University of Pisa and the Provincial Administration. Through a participatory process it led to the design and partial implementation of its institutional framework. This firstly included two policy documents - the *Charter* and the *Strategy* -, which set out the fundamental principles, the goals and the steps to be followed at operational level. The project then led to the definition of two important institutional tools of co-decision and interaction - the *Programme Agreement* and the *Local Alliance for Food* -, amongst, respectively, public and private actors.

In the context of new reflexivity and mobilization created by this process, in 2013 a group of citizens, researchers and professionals established the Food Council of Pisa, an organization aimed at stimulating a reflection on the food-related issues at urban level and at promoting an integrated approach to their management. It relates to the model of the Food Policy Councils (FPCs), innovative forms of collaboration between citizens, public and businesses that many cities, looking for innovative processes of planning around food issues, have established.

The FPCs provide innovative opportunities for discussion, giving voice to people generally underrepresented by institutions; assess and try to orient local food policies; initiate and support specific projects and programmes. Their primary purpose is to identify and propose innovative solutions aimed at improving local food systems, making them more socially and environmentally sustainable and able to contribute to local economic development.

This papers aims at analysing the development of the experience of the Food Council of Pisa, highlighting its potentials, also in relation to the wider pathway towards the Food Plan.

TRAINING PATHWAY AND CONSOLIDATION

This Food Council of Pisa (FCP) is an agora that tries to structure and implement the action of the Alliance within more defined spatial and governance contexts.

It originated from the initiative of people who, for personal or professional sensitivity, were interest in promoting a public debate about the food and its multiple implications in the life of the city. The development of cooperation with the team of actionresearch engaged in the Food Plan in the Pisa province was crucial to the starting of its activity, since the spring 2013.

It is currently formed by citizens engaged in: nutrition; sustainable gastronomy; promotion of practices of self-production (e.g. urban gardens) and of direct food provisioning (e.g. short chains); disease prevention; education and research; caring, social welfare and social inclusion; reduction of food waste.

It began its training collaborating with a Territorial Council of Participation of the City (CTP5), a suburban articulation of the Municipal Administration. Over the months, it started to operate on the whole urban territory, and independently from the institutional paths.

In September 2014 the promoter group has formalized the establishment of the Association "FoodCouncil of Pisa", whose motto is "feeding the city and nourishing democracy" (Fig. 1).

Figure 1. Logo of the Council of Food of Pisa

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After a first phase of reflection on the formalization of the group and of its mechanisms of governance, the founders have focused their attention on the identification of the areas of action, on its visibility and communication of its mission, and on the development of relationships and collaboration in the city, especially seeking connections with the various urban initiatives of active citizenship.

ACTIVITIES UNDERTAKEN AND ONGOING

The area of jurisdiction of CTP5 is a large portion of the city, that hosts most of the stakeholders involved around food practices (e.g. big retailers, canteens, NGOs and civil society organizations, education and research institutions) and in which more than a third of the municipal population lives.

Since 2014, the FCP began to take concrete action in fields of particular relevance for the city life (urban allotments, use of green spaces, food-health relationship, sustainable consumption), according to the interests of the members and to the opportunities arisen.

In the early months of the year the CFP activity focused on the drafting of a new regulation for the allocation of urban gardens, gathering requests from different stakeholders and exploring best practices developed in other contexts. The work done did not find favour with the Municipal Administration, but stimulated a public debate on the issue.

Afterwards, the FCP participated, providing support and presence of experts, to a series of meetings organized by the University in view of Expo 2015, and to seminars for school and university students, organized on issues related to food sovereignty by the collective of teachers.

Thanks to the relationships that through these initiatives the Association had established with a network of activists and professionals, it could participate in the organization of "Pisa Città in Fiore", a public event aimed at promoting a reflection on the state of the art, opportunities and prospects of the urban landscape design and management.

At the same time, the FCP obtained to take part in the participatory process launched by the Municipal Administration for the design of the Cisanello Park, an area of about 10 acres within the city. Its contribution, that has been added to that of other 14 associations participating in the process, was aimed at stimulating a debate on the importance of considering the food among the issues addressed in the project.

In the plans for the future of the CTP there is the promotion of a public moments of debate on the issue of the sustainability of the food habits. This initiative sees the FCP to coordinate a network of actors, including a chef, farmers, traders, groups of consumers, researchers, professionals and associations. The various activities envisaged and the related planning are aimed at promoting a discussion on the un-sustainability of the dominant food patterns, with particular regard to the high consumption of meet. To that end, through different forms, they will draw attention to the various implications of the food choices that intervene: the environmental costs, the health negative effects, the economic and ethical issues.

CONCLUDING REMARKS

The range of initiatives in which the FCP was involved in these first two years of life has made the members aware of the importance, in a context rich in associations and initiatives developed from below, of interacting and collaborating with other pathways activated in the area, to enroll new members and to build alliances. A wide variety of backgrounds, skills and languages is crucial to the life and activity of the FCP, to its capacity to animate an ever lively discussion and to reach people who have different sensitivity, needs, problems and experience. The growth of the network of relationships is also important to take new opportunities and so to further expand its activity. At the same time, it is evident that the pathway undertaken is far from simple and has a long time horizon. This is particularly true with regard to the relationships with the public administration, which has so far seemed poorly aware of the opportunity of implementing an integrated and multi-actor urban strategy for food.

This experience has made it possible to explore the pathway of structuring of a Food Council, as a locally embedded and grassroots initiative, to which the attention to the needs and opportunities that come from the territory and the distribution of responsibilities and activities are strategic. The pathway so far developed can represent a first platform, for the development at the organizational level that is needed in the case of an expansion of the area of reference; for the promotion of further initiatives; for the implementation of the wider integrated strategy of the Food Plan. In particular, it can facilitate: the sharing of common principles and objectives and the identification of priorities in other areas; the understanding of training needs and the implementation of innovative learning paths; the identification of the most suitable forms of management and of communication of activities; the fine-tuning of the relationships with the public actors.

All these represent opportunities of learning, which can significantly contribute, more in general, to the definition of innovative models of food governance.

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Il Papavero: the butterfly laboratory and the financial strength of solidarity economy

A. Savioli, G. Crisci, M. Fonte[1]

***Abstract* – Il Papavero is a small organic family farm in the nearby of Rome that sells its products directly to customers, mainly through the Solidarity Purchasing Groups (GAS). It carries out also on-farm educational activities for children of the primary schools of Roma and other nearby towns. From the strong relationship with the GAS movement, a new innovative practice was born, which involves financing the farm pre-paying in September the products that will then be delivered in spring and summer. This practice has many positive consequences: high quality of the products obtained with sustainable agricultural practices, reduction of production losses and guarantee of fair, stable and accessible prices both for producer and customers.**

***Keywords* – Organic Agriculture, Multifunctional agriculture, GAS movement, Community Supported Agriculture, Solidarity economy, Rome**

INTRODUCTION

In the industrial food systems healthy food is sold at high prices for consumers, without any guarantee of a good remuneration to farmers (van der Ploeg, 2000). Prices are volatile and food wastes are in great quantities (Patel 2007, Roberts, 2013). The experience of collaboration between the GAS movement and Il Papavero, a family organic farm in the nearby of Rome, seems to be achieving simultaneously many goals: respect for the environment and conservation of biodiversity, a good remuneration of farmers' work, lower prices for the consumers, stable prices and less waste.

THE STORY OF THE FARM

Il Papavero was born in 1954. The farm covers seven hectares: three are woods mostly dedicated to the educational activities on the farm, while four are cultivated with strawberry, peaches and, more recently, with new implantations of old varieties of fruit. The fruit produced is sold to GAS in Rome and to BioSolidale, a firm that distribute organic production to schools' canteens, restaurants, GAS and individual families. Strawberries are the cultivation that best fits the type of soil. In 2015 the farm produced over six tons of strawberries and one ton of peaches and guaranteed a gross income of about 30.000 Euro. It is important to notice that income from farm constitute about fifty percent of family income.

About 20 years ago, Fiorella and Angelo, the owners of the farm, after participating to a course on organic farming organized by the Lazio Region, decided to convert the farm to organic methods of production. The decision was strengthen by the fact that the income they were able to gain in the conventional system, when selling their product to the wholesale market, was very low and it hardly covered production costs.

Angelo and Fiorella like to present their farm as 'educational farm': the three hectares occupied by woods are dedicated to receiving children of the primary schools of Rome and other nearby cities. They receive about 2000 children per year. To them Angelo and Fiorella like to show the beauty of biodiversity, through the 'butterflies laboratory" or the 'Bees house' in which children can watch how bees cooperate to produce honey. They want children to learn also what is agriculture. An other project is called 'From seed to seed": children plant a seed and follow the plant growing up to the maturing of the fruit and the production of new seeds.

THE PHILOSOPHY

The purpose of Angelo and Fiorella is to live well and earn a decent income. Angelo highlights that, instead of accumulate profits, their goal is to make the farm more resilient and to build profitable and continuing relationships with GAS. For them, this is the best way to deliver future generations a better world: not only money but also good land and biodiversity.

It is their belief, in fact, that agriculture should provide public goods to the community of citizens: good food, landscape, biodiversity, healthy air and environment. For instance, Angelo and Fiorella do not fight insects with pesticides, but manage their agroecological system so as to find equilibrium with the incessant presence of ants. They like to enrich their fields with the presence of butterflies that are attracted by the presence of wild flowers. Even the selection of seed is crucial. Seeds are supplied by a nursery that reproduces ancient varieties, much slower in reaching full production, but more resistant to pests' attacks.

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FROM THE LONG TO THE SHORT CHAIN

At the beginning they practiced a conventional agriculture and sold their produce to wholesale markets. Soon realized that this type of agriculture did not guarantee them a fair income for their work. The turning point was a course on organic agriculture organized by Lazio Region that Angelo was attending. This course opened the door to many contacts with farmers and association practicing and promoting organic agriculture. They decided to follow this route. At the beginning, even if producing with organic practices, they were selling to conventional market channel, which did not guarantee their product a premium for being organic. They started to collaborate with a co-operative of the organic movements, which was buying part of their produce. Finally, one of the organic farmers that inspired them introduced them to the GAS movement in Rome. They started their contacts with the GAS Podere Rosa, who introduced them to other GAS: now they sell strawberries and peached to about thirty five GAS in Rome and surroundings.

Angelo and Fiorella are proud to produce with organic, almost biodynamic practices and appreciate their relation with GAS: they are proud when someone from GAS writes or calls them to tell how good the strawberry, how good the peached are.

The relation with GAS is becoming always stronger. Many Gas members go often to visit the farm. From this relation one of the most innovative practice in the collaboration of the farm with the GAS movement emerged. Every autumn, Angelo and Fiorella were facing some financial difficulties, when setting up the production conditions for the strawberry production. They needed money to buy the new plants and usually had to ask for a bank credit. In 2001 they decided to involve the GAS movement more tightly in the destiny of their farm and asked them financial help. The request was launched through the Lazio GAS Network: twenty-four groups responded.

THE PRE-FINANCING PRACTICE

Since 2003, a loan agreement between the farmer and the GAS involved is stipulated at the beginning of the growing season, autumn in this case, according to which the GAS proceed to the payment in advance of a quota, generally 50%, of the product to be delivered in spring and summer. This allows the farm to starts production without seeking any bank loan. When production is ready to be delivered to GAS, the rest of the amount due and eventually some extra orders are paid. Prices are established in the contract and remain stable throughout the year. In the case of emergence of any production problem, a new solution is negotiated among the parts.

The pre-financing agreement was set in place inorder to cope with the rising costs of inputs for organic agriculture as well as a way to deal with the uncertainties of the purchases by the customers. Now the move toward a community supported agriculture model is in consideration, as a way to strengthen the collaboration and enlarge the activities of the farm in the fruit production of old plant
varieties.

ACHIEVEMENTS

The GAS movement considers this revolutionary practice of cooperation between producers and consumers one of the most successful experiences of the network.

Today, Il Papavero supplies more than 35 GAS. Every two year the loan agreement is renewed. The price agreed upon is fair and accessible: "about half you can find in an organic shop and, in addition, the fruit is fresher and tastier", says a member of the GAS network. Furthermore, since 2013, when the practice was introduced, strawberries losses dropped by about 40% and sales nearly doubled, from 14.700 kg to almost 26.000 kg in 2015.

Angelo and Fiorella believe the agreement has called consumers to their responsibilities: "GAS have endorsed the project and felt involved (...) have been willing to buy a greater quantity of product (...) The price remunerates our activity and is constant and accessible to consumers over the agreement period "

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Urban Fruit
Fruits and orchards as local practices for new forms of public participation and urban space. The experience in Rome

Michela Pasquali[1]

***Abstract* – In Mediterranean cities, thanks to the climate and a long historical tradition, an amazing variety of fruit trees is growing in public spaces creating a widespread orchard. But every year tons of ripe fruit falls on the ground and rots, creating management and cleaning problems, and representing unacceptable food waste! The nonprofit association Linaria created Frutta Urbana, the first project of its kind in Italy, aiming to map, pick, and donate the fruit that grows in the city's public spaces. Frutta Urbana also includes activities such as the creation of new urban orchards using local fruit trees of heritage varieties, aiming to increase urban biodiversity. Frutta Urbana's education programmes involve schools, communities and associations to prepare and cook fruits. Each product is a social experiment with people with disabilities, elders and immigrants who can learn about the endless possibilities of enjoying public orchards and to preserve and process fruit, increasing a sense of community.**
***Keywords* – urban fruit, public participation, sense of community, local food, food waste, urban biodiversity, new urban orchards.**

INTRODUCTION

Urban trees provide many benefits to society – aesthetic beauty, protection from the elements, the ability to sequester carbon and reduce pollution. However, one basic attribute of trees is often overlooked in urban settings – their ability to produce food. City fruit trees, located in public parks, gardens or streets, are often wasted or unused.

The project Frutta Urbana's (FU) purpose is to promote urban fruit tree production, inform people of urban fruit tree possibilities and benefits, and develop a greater awareness among city dwellers about an existing, underutilized resource that our urban forests can provide. Currently FU, created by the nonprofit association Linaria that works around the topic of urban public spaces, is the only existing project in Italy that promotes the growing and harvesting of fruit from trees within cities to aid their under-served residents. FU is focusing on volunteer help and donations of fruit obtained from urban forests and distributed to those in need.

In order to achieve our goal, FU promotes fruit tree harvesting, stewardship, and education, using a different approach, from mapping existing fruit trees, picking and distributing fruit, to edu-cating the public about tree planting and mainte-nance through workshops and classes, and planting new fruit tree orchards. FU is leading the way towards creating a strong relationship be-tween urban forests and local food production.

THE OBJECTIVES

From a food perspective, growing fruit directly in communities where it is consumed provides resi-dents with immediate access to healthy food and can improve food security in poor communities. FU aims to promote the daily consumption of fruit, an essential part of a good diet and good health. By donating food harvested through FU it is taking a step toward improving this situation during certain seasons.

From an environmental perspective, FU wants to emphasize the ecological and landscape value of the orchards in urban areas; to disseminate and preserve biodiversity of our territory; to create new green and low-maintenance areas that play an important role in the urban ecosystem. Locally grown fruit has the potential to reduce air and water pollution related to conventional food production and transportation. Fruit grown in cities is less contaminated with pollutants than fruit that is grown on an industrial scale as it is not chemically treated with fertilizers or pesticides and does not undergo the post-harvesting treatments that occur during the maturation and storage phases.

From a social perspective, FU wants to create community spirit and strengthen the connections between citizens through the organization of collective actions and events regarding the care, harvesting and preservation of fruit. To contribute to sharing knowledge amongst schools and those interested in learning about other aspects of Rome's history, traditions, and culture. Additionally, people may gain a stronger sense of connection to the food they consume if they know how it was grown and where it came from.

From an economic perspective, we sell some of our harvested produce in an effort to make our programme financially sustainable and to help cover operating costs. The FU sales model could be further developed for for-profit companies, thus effectively creating local economic benefits through job creation related to urban forest fruit production within cities where it is produced and sold.

THE ACTIVITIES

The fruit map

In order to map existing urban fruit trees, gain the input of local residents, raise awareness, and garner interest in their programmes, FU utilize a digital mapping program from Ushahidi a not-for-profit

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software company that develops free and open-source software for information collection, visualisation, and interactive mapping. Continuously updated, the map is on line on our web page www.fruttaurbana.org and it is an accessible public tool, for sharing information with those who are interested in picking fruit and giving citizens the opportunity to identify and locate new trees. In addition it displays important data on biodiversity and the botanical heritage of Rome.

The harvest and the distribution

The fruit harvests are always organized with the great help of the volunteers of RomAltruista, an association that organizes a group of 10.000 people. After the gleanings, the fruit is immediately donated to soup kitchens like in Piazza Venezia on Mondays, and food banks, like La nuova stagione, Caritas, and the Casa di Riposo G.B. Taylor.

Figure 1. Gleaning pomegranate in the public park Commodilla at the Garbatella, Rome.

The new orchards

FU wants to create new orchards that will be productive gardens, botanical collections of old varieties, as well as places to learn, experiment, gather and share, and orchards require less maintenance than vegetable gardens. In 2013 we created a little orchard with ancient varieties of fruits in Metropoliz, a former factory in Via Prenestina, Rome. The idea is to organize the orchards through workshops open to everyone to involve people to create a new sense of community. Throughout this process, FU collabo-rates with local authorities, schools, and other associations, depending on their needs.

The education

One of the fundamental purposes of FU is to involve the local communities through neighbourhood committees, and the social, environmental, and school groups. Workshops are used in schools, professional training sessions are given, as well as conferences and publications that aim to raise citizens' aware-ness and create new linkages between the public space and its inhabitants and to strengthen the sense of community and civic engagement. In order to learn about the endless possibilities in preserving and processing fruit, FU works with Associazione Capodarco with young people with disabilities, the Associazione La Sosta that organizes a group of women from Afghanistan and Iran, the many volunteers of RomAltruista and the Associazione La casa del cibo. So all the fruit that is not immediately delivered is transformed into sauces, jams, juices, cakes and beverages. These products are sold to make the project economically sustainable and cover the costs associated with the different activities.

Figure 2. Learning and preparing the original English Orange Marmalade at La casa del cibo, Rome.

CONCLUSION

Fruit trees and orchards are rich in culture and history, representing the peculiar characteristics of the Roman territory. Orchards have played an important role in communities for many centuries, providing a focal point, a gathering space, and a place where people and the rest of nature successfully work together to create abundant harvests and they provided fresh fruit long before the time of global freight. FU aim to improve and create healthy, diverse and resilient systems, while reducing environmental degradation, to give back to fruit trees and orchards their social, productive and aesthetic role they had in the past. The priority of FU is to reintroduce and promote the cultural values associated with fruit trees. Our method aims to encourage collaboration, sharing and the exchange of experiences and knowledge to explore creative and sustainable solutions that promote a social sense of community and the conservation of our botanical heritage.

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Food education at school "Add a seat at table"

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***Abstract* – Piacecibosano, is an NGO coordinated in partnership with the Research Centre for Sustainable Development OPERA- Università Cattolica Sacro Cuore of Piacenza, a synergetic initiative aimed at developing a sustainable and healthy food production network based on public participation. In order to reach this objective the association has developed a local network to bridge the communication gap between all the actors in the chain and the lack of recognition of the added value of active participation in increasing sustainable consumption, linked to the territory and values. In November 2014, the project "Add a seat at table" was launched involving 4 secondary schools of Piacenza for a total of 30 students and 5 teachers. Students identified some issues of their interest related to food, organised them into five thematic groups and started a discussion with their teachers sharing knowledge and experiences. At the end of the process, projects proposed by the students will be realized and will be presented at the international exhibition (EXPO) in Milan.**

***Keywords* – Sustainable consumption, active partecipation, conscious choice.**

INTRODUCTION

Today, the Piacecibosano is a network made up of 35 public and private actors representing the sustainable food and agriculture production chain in a given territory. In this vision "the sustainability" thus becomes a factor in competitiveness and development, generated by an interconnection between communication and participation, but also by a connection with a territory and its culture; these are the basic elements upon which innovation, understood as the continuous renewal of knowledge and existing technologies, is constructed.

This network, which is currently in its initial phase of realization, is aimed at developing methods and tools to spread the participatory approach to improve the consciousness of actors in the chain making it replicable in all territorial, social and educational, contexts. To this extent the Association Piacecibosano will organize events, such as:

1-workshops, called "CAFFEXPO", to promote scientific and technological applications for food quality and safety and innovation for enterprises. The event consists in a series of informal conversations on sustainability, which facilitate, for example, the communication to consumers and citizens to increase awareness on sustainable production and consumption.

2-secondary schools food education programme, through innovative participatory experiences with a light on the quality of school lunches, by valuing the identity of food and its production process; developed in collaboration with Chamber of Commerce of Piacenza. The aims that motivate this action is that generally young people are not fully capable of making independent and informed food choices and end up adapting to trends proposed by society.

Therefore it's a priority to form a critical consciousness that can help young people to develop an autonomous and aware behavior in choosing the food.

Nevertheless, schools offer a poor number of initiatives about nutrition for students.

In addition, the large amount of the projects regarding nutrition lacks a dialogue between the school system, institutions and associations, aimed at creating a shared educational orientation with respect to the theme of healthy and sustainable food.

MATERIALS AND METHODS

In April 2013, according to these limits and goals, the Association started some actions of education about nutrition. In October 2013, 350 students from 11 secondary schools of Piacenza were involved in an Open Space Technology dedicated to food (Harrison 2008, Valente 2009). Due to the success obtained by this initiative, the Association Piacecibosano decided to support schools with a new initiative. In November 2014, the project "Add a seat at table" was launched involving 4 secondary schools of Piacenza for a total of 30 students and 5 teachers.

The project aimed at involving students and teachers in discussions and in-depth analysis about issues of their interest related to food, in order to collect data, products and events to share with peers.

The Piacecibosano team planned four meetings between November 2014 and June 2015 and extra "online" support using a whatsapp chat and a mailing list dedicated to the project.

In the first meeting, students and teachers identified five thematic groups, that concerned: Nutrition and sport, Vegans and vegetarians, Food and culture, Food disorders, Conscious choice and Sustainability.

After choosing issues, each group composed by students and teachers started a discussion about the topic focusing on contents, products and events.

In the early stages of the project, the bibliographic analysis was of great importance, supporting the groups with two extra events related to topics and methodology, also with the format "CAFFEXPO" in the school. After acquiring the knowledge to make a proper use of sources, each group involved different subjects to develop their own themes. In total a nutritionist, 8 teens from different cultural background, one vegetarian, 75 citizens of Piacenza were contacted and interviewed. Once content were developed, groups were encouraged to identify the most appropriate approach and event type to spread the results among peers.

RESULTS

The themes that reached the final stage of development, each with a different objective and

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recommended products and roles to achieve them, were in total 4 as described in the table below.

Table 1. Projects developed by students and teachers.

Issue	*Sport and nutrition*
Objective	To disseminate knowledge on healthy eating for those who practice sport
Products	Bibliographic research on the relationship between diet and sport - nutritional physician interview - standard menu specific to sportive people and student the seven rules for people practicing sports
Issue	*Vegan and vegetarian*
Objective	To transmit information on vegetarianism and the nutritional properties of related food to overcome the stereotypes associated with this eating style.
Products	- Web Search on vegetarian food (definition, nutritional properties, recipes…)- Vegetarian interview - A survey involving 75 citizens in the area of Piacenza about vegetarian's knowledge and social representations.
Issue	*Cross-cultural food*
Objective	Raise awareness of the food heritage of different cultures.
Products	A video ("cross-cultural people and food") that collects interviews conducted among students from different countries and food habits
Issue	*Food disorders*
Objective	To provide reliable knowledge in order to catch the first signs of the food related disorders
Products	Multimedia presentation containing images and brief information about eating disorders

To the extent to spread these results to a broad public, a full day dedicated to alimentary education is planned by the early months of the next school year involving various schools (Puton 1999).

The day will be scheduled as follow:

1. Sport event (volleyball tournament or other) to promote a standard menu specific to sportive people and the "seven rules" for people practicing sports;
2. A vegan and vegetarian buffet realized by students with typical and different products from various Countries;
3. The projection of the video "cross-cultural people and food" that collects interviews conducted among students from different countries and food habits;
4. The diffusion, through flyers and brochures about eating disorders in order to spread reliable knowledge to catch first symptoms and related risks.

The students will present the same products in a dedicated day within Expo 2015.

CONCLUSION

The experience is an example of promoting food and nutrition education using a participatory approach with all the actors of the education system involved (Lambiase, Bisagni 2014). Students learned more about methods to increase their knowledge and how practice a peer education. Peers and schools will share final products and events with similar actors. These actions will improve a schools exchange approach that could be replicated in other contexts interested in addressing the theme of sustainable nutrition. Strengths of the program are the following: participation, nutritional awareness, empowerment, pro-activity, peer communication, listening and consideration of the needs and demands of students and teachers, inter-institutional dialogue created between different schools around the subject of food, the connection between school and institutions. Problems found are the following: need to find referee to coordinate each group of students and teachers in the design of interventions and need of strong coordination between the schools, students and teachers. Indeed poor coordination can affect the communication and management of organizational processes.

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The evolution of urban gardens in Puglia into a revolutionary and multifunctional context

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***Abstract* – Up to the first half of the previous century, the urban vegetable gardens (UVG) were the first source of vegetables for Puglia's local populations, due to higher availability of agricultural resources near to urban areas and to the advantage of being close to the work place for farmers and their families and other labour units. Nevertheless, in the last decades UVG have been progressively replaced by urban buildings for industrial and residential use and by infrastructure artefacts, while vegetables have become widespread crops in the region. However, the risk of seeing disappear a great number of traditional agro-biodiversity and agricultural techniques is too high. The regional project "Biodiversity of vegetable crops of Puglia (Biodiverso)" works in this direction: to search for, to collect and to recover old genetic material, traditional vegetable practises and lost knowledge. This project also has a revolutionary approach that is based on a participatory method engaging the community, appropriately using the social network. The result has been the creation of a network of people, associations, social projects connected through and thank to the activity of Biodiverso. Among these realities, a case study has been considered, where an ancient UVG has been recovered assuming new perspectives and functions, aiming at enhancing the integration of the UVG in the urbanised society.**

***Keywords* – Urban vegetable garden (UVG); biodiversity; vegetables; social network**

INTRODUCTION

Puglia is the first region in Italy for vegetable cultivation (Elia and Santamaria, 2013). However, before the introduction of some important innovations allowing the increase in yielding and cultivated areas, vegetable production in Puglia was limited to the urban vegetable gardens (UVGs). Up to the first half of the previous century, they were the first source of vegetables for local populations, that have traditionally high vegetable consumption due to both climatic reasons and innate food preference. Limitation of horticulture to the UVGs during the first half of the last century was due to higher availability of water for irrigation and manure and organic wastes for fertilization and to the advantage of being close to the work place for farmers and their families and other labour units. After land reclamation and the diffusion of more extended and efficient irrigation methods, vegetable species became important crops in wide and suitable lands in Puglia. As a consequence in the last decades UVGs have been progressively replaced by urban buildings for industrial and residential use and by infrastructure artefacts.

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At present very few UVGs are still surviving over the whole region, thanks to the untiring work of some ancient patriarch growers, who are carrying on, at the same time, an action of safeguard of old vegetable biodiversity. In the research project "Biodiversity of vegetable crops of Puglia (Biodiverso)", funded by the Regional government of Puglia, a great work of recovery and valorisation of old varieties susceptible to genetic erosion has being done. Through this action, researchers are carrying out a mapping of the regional territory also in terms of presence, distribution, importance and functions of UVGs. Some of these are real examples of rural archae-ology, perfectly preserved close to the urban centre.

In this note some activities in the project Biodiverso are described, based on the community participatory method, as well as a case study related to the evolution of an ancient UVG in a modern multi-functional context perfectly integrated into a urban society with a rich social and touristic texture.

METHODS AND CASE STUDY IN BIODIVERSO

A capillary work of searching for, collecting and recovering vegetable plant material has been conducted in Biodiverso. This is its main objective. This work has been carried out through a multiple approach, consisting in i) research of written (old books, annals, inventories) and oral information (held by old people, named "ancient patriarchs"); ii) application of modern technologies (i.e. mapping sites with geo-referenced photographs of places where vegetable genetic materials and related in-formation are collected, a project website (http://biodiversitapuglia.it/), to disseminate information, and a page on social media to interact with followers who become suppliers of materials and news); iii) local seminars and meetings on the whole regional area to create opportunities of exchange. Through this approach citizens become active contributors and actors in the research and conservation activity. The Facebook page of Biodiverso (https://www.facebook.com/BiodiverSO?ref=hl) has reached 2,800 followers in less than a year and allows a daily exchange between researchers and citizens about every aspects of the vegetable crops (old practises, names, recipes, traditions). A great amounts of contacts, realities and traditional products have been put together in the network that the project is being built through the social media and the information and communication technologies (ICT). The generated connections are gathering in a future planning feasibility.

RESULTS AND DISCUSSION

Among the existing contexts discovered through Biodiverso, some are noteworthy and will survive until the old growers will live. They are scene of actions of safeguard of old vegetable biodiversity and traditional cultural practises. Some others have been recovered

through projects involving municipalities, cooperatives or associations active in different fields and can be taken as an example or pilot project regarding the possibility of enhancing the old UVGs. Probably the most representative among these projects is in Ostuni (Brindisi), at the old Giardini della Grata (40°72' N, 17°59' E) near the urban centre (extra-moenia gardens). Its origin dates back to the Arab domination in Puglia. It was an old UVG active until the past decades (Fig. 1) as a municipal vegetable terraced garden, thereafter abandoned for some years. In recent time it has been brought back to life by a cooperative company (Bio Solequo) working in organic vegetable production and in recovering and safeguarding local vegetable biodiversity. The UVG was and is a bridge between urban and rural areas. This function is strengthened by the rainwater saving system from the Ostuni medieval centre to the garden cisterns, through ducts and stone artefacts made by the Arabs and recently recovered. At present the renewed Ostuni UGV plays a role in transferring the know-how through the generations, since the old survivor gardeners have been involved to teach the local cultural techniques to the young farmers engaged in the project.

Currently, in addition to the organic production of local vegetables (Fig. 2), this UGV is the location of horticulture courses for children, educational tours about organic agriculture and nature, green workshops, creative workshops for adults and children, open days.

In conclusion from this point of view the example of the Giardini della Grata gives a new perspective to the valorisation of UVGs. A combination of new functions: i) environment safeguard (preservation of biodiversity, landscape governance, rainwater recovery, waste composting); ii) education to new generations (promotion of knowledge and consumption of local varieties, teaching almost lost cultural techniques, hosting gardening classes and vegetable garden for children, promoting knowledge and identification of wild edible species); iii) governance (participated management of urban and peri-urban areas and common goods, food production planning); iv) social (horticultural therapy, participation of elderly and disadvantaged groups).

Finally it is noteworthy that a research project was able to create connections between different local contexts to lay the foundations for future planning.

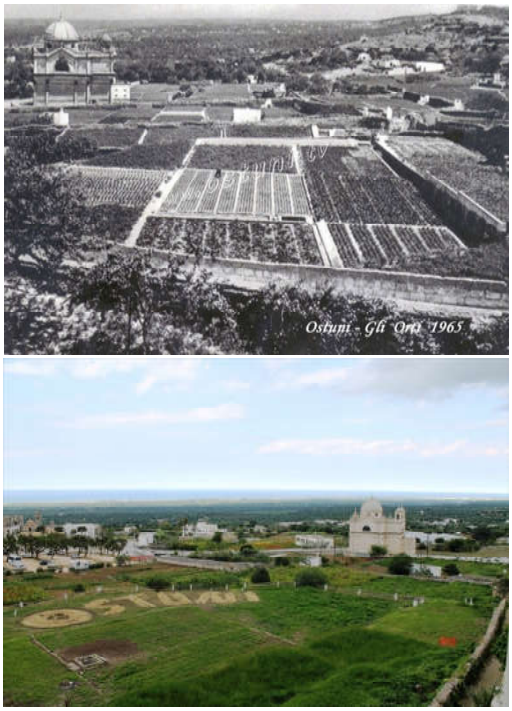

Figure 1. The past and the present

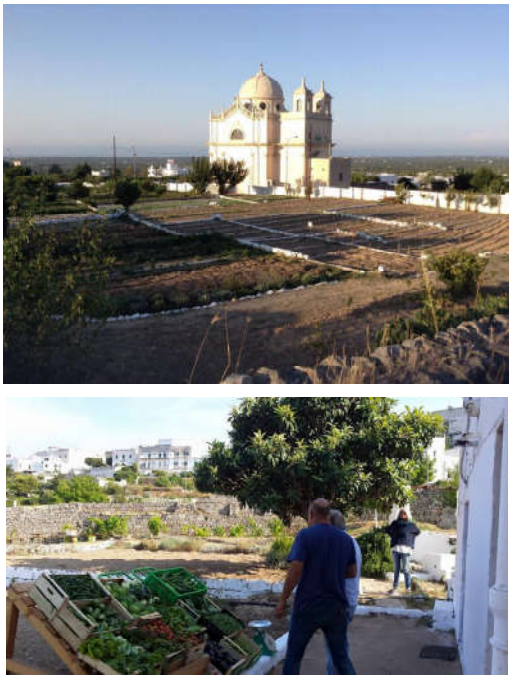

Figure 2. Organic vegetable production and in-situ retail

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Innovating lands access conditions to rescue a threatened heritage: the project "Adopt a terrace in the Brenta Valley"

Sarah Stempfle[1]

***Abstract* – This paper presents the initiative "Adopt a terrace in the Brenta Valley", a bottom-up stewardship experience regarding a threatened heritage represented by majestic terraced systems in North-East Italy. The project is centred on an adoption mechanism, which enables the interested subjects to recover the abandoned or maintenance-lacked terraces through agricultural practices, thanks to a pact between landowners and growers, in a context of urban-rural exchanges intensification. Everyone can easily adopt and cultivate a terrace in return of taking care of it, through a free of charge leasing agreement. In this way, the individual needs of direct access to land, self-reliance in food production and agro-recreational activities meet the collective interests in preserving the cultural and environmental heritage, in a landscape perspective. The adoption strategy is a revolutionary solution because innovates the conditions of lands access/use and endorses civic engagement in sustainably management of common goods.**
***Keywords* – land(scape) stewardship, adoption strategy, civic agriculture.**

INTRODUCTION: CONTEXT AND BACKGROUND

The present contribution focuses on a bottom-up experience of landscape and environmental stewardship, which experiments a social-driven territorial requalification by reintroducing the conditions for a widespread caring-action through agricultural practices.

The case-study area concerns the little municipality of Valstagna, located in North-East Italy, among the highlands of the Veneto region, in the valley of the river Brenta. Along all the length of this very narrow valley run more than 230 km of dry-stone walls that support little plots of land, forming huge terraced systems. The terraces,by which the mountains slopes are shaped, reached their maximum majesty during the 19th century, especially due to the tobacco growing.

From mid to late 20th century, they underwent a progressive decay, catalysed by the "great modernization process" that emptied the valley and brought its traditional socio-economical and farming system to collapse. Nowadays, only a few terraces are still cultivated or managed, whereas over the 50% of them are completely abandoned and overgrown, and nearly the 60% of the dry-stone walls are in ruin.The combination between the human neglect and a messy renaturalization caused the degradation of the anthropic artefacts, the landscape and environmental depletion, and the increase of hydro-geological risk.

However, the last years witnessed a return of interest in the terraces, thanks to a change in the social perception of the value of this threatened landscape, also in response to an increasing demand for free cultivable land expressed by the urban dwellers of the nearby cities.

A POSSIBLE SOLUTION: THE ADOPTING SYSTEM

In order to contrast the degradation processes, in 2010 bore the initiative *Adopt a terrace in the Brenta Valley*. Starting form the observation of spontaneous practices consisting in re-appropriating some abandoned plots for horticultural purposes, the project has been striving to scale-up them into a more structured and reproducible approach for recovering the terraces. Ithas been developed through action-researchby the University of Padua, in col-laboration with the Municipality of Valstagna and the local section of the Italian Alpine Club (Lodatti, 2012; 2013).The project involves a well-assorted system of actors and is based on a strategy of "adoption", which enables everyone interested in taking care of a disused or maintenance-lacked terrace to cultivate it.

A double option of adoption is possible: a long-range one, that consists in subscribing a contribution for keeping the terraces, coveringthe expenses for equipments and materials needed by a team of volunteers; a direct adoption, for the ones who want to take care and cultivate personally a plot of land. The harvesting products go to the fosters, while the ownership of the land isn't questioned.The annual fee for a direct adoption is only 10 euro, so everyone can afford it and there is no entering barrier. The adoption period lasts 5 years and is renewable; after 5 years the "foster" receive a diploma of *Terraces benefactor*.

The organizational structure is based on a Committee that mediates between the landowners – who are mainly emigrated or unable to take care of the terraces – and the users, the public actors and the associations practicing their rescue and maintenance. The Committee getsin free loan and then entrusts the terraces to the volunteers, who undertake to adopt them in accordance to a set of rules, *in primis* some guidelines for a good management.

RESULT OF THE PROJECT

During the first 4 years of activity, more than 120 terraces have been recovered (for a total surface of over 5 ha). The cultivations give good quality results and the soil, rich in magnesium and other elements as attested by the Regional Environment Agency, allow growing tasty vegetables. From a first monitoring conducted by the Commettee, the 75% of the terraces where evaluated as well managed on the base of criteria such as accessibility, degree of maintenance, functionality. For the future, the monitoring activities will be increased, also by involving the owners and the

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local community in order to improve the credibility of the initiatives, as well as the collective awareness.

Besides, the Committee promotes other activities, such as collective workdays, educational and formative activities, organizational and convivial events, the restoration of historical artefacts (like the typical water signs),or the participation to other local initiatives.So, beyond the food production, these activities contribute to the building of a sort of *community of practice*. The sharing of needs, ideas andexpertise within this community is helping to further valorize this experience. Many collateral projects are following-up, including some economic valorisation tries, such as the creation of a young farmers' cooperative and a local market for km0 products.

Due to the good achievements and to en emulative power, in 2015 the project has been extended to the nearby Municipality of Cismon.

THE ADOPTION STRATEGY AS A REVOLUTIONARY SOLUTION

The adoption strategy can be outlined as a revolutionary solution: i)because it innovates the conditions of lands access and use beyond the classic public-private dichotomy,providing win-win solutions for all the actors involved (landowners and users, individuals and community), and ii) because it endorses civic engagement in a sustainable management of common goods.

Moreover, the project can be interpreted both as: a) an opportunity for mobilizing collective action, through the social reappropriation of physical and symbolic spaces and the reframing of a marginalized territorial context; b) a strategical device promoting participatory management schemes for territorial heritage, by reintroducing a spread action of land-care and stewardship. Positive impacts are recognizable on social, environmental and micro-governance dimensions.

CONCLUSIONS: MULTIFUNCTIONAL AND CIVIC POTENTIALS OF AGRICULTURAL PRACTICES

Although representing a small experience on a very local scale, this initiative suggests a different conceptual and operational framework for collective action (valorising user-oriented strategies responding to social demands). An interesting point is that the individual needs of direct access to land, self-reliance in food production and agro-recreational activities meet the collective interest in preserving a cultural and environmental heritage.

The multifunctional potentials of agricultural practices could be here framed in a governance perspective, while arises their civic role, which cannot prescind from human resources investments, neither from the drive of expertise advocacy and policy support.This could be better understood through the theory of *civic agriculture*, laid out by Lyson (2000; 2004; 2007) and others (Lyson&Guptill, 2004) to describe the rebirth of a small-scale, locally oriented and community rooted agricultural model. Based on traditional methods, knowledge of place and sharing of information among communities of practitioners, the various forms of civic agricultural production and distribution depart from the conventional commodity agriculture. A wider meaning of the concept underlines its relationships with places (DeLind&Bingen, 2008), embodying the environmental and social dimension (Durastanti et al., 2011; Di Iacovo et al., 2014) and fostering new forms of citizenship, both in urban and rural areas, when other opportunities for civic engagement are in decline (Obach and Tobin, 2014).

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Agroforestry for increasing production, income generation and better environment

Md. Abiar Rahman[1&2], Md. Giashuddin Miah[1] andMahbub Islam[1]

Abstract **– Agroforestry is an age-old system that plays a vital role in rural livelihood of Bangladesh. Numerous traditional and modern agroforestry systems are found in Bangladesh. Sole Jackfruit orchards are widely found particularly in Terrace ecosystem. Farmers are not getting desired benefits due to improper management. An orchard was transformed into multi-storied agroforestry system (MSAS), where Jackfruit trees were kept as upper-storied; Papaya was at middle-storied; and seasonal vegetables such as Brinjaland Gourd were grown as lower-storied crops. Jackfruit yield was increased by 33% in MSAS due to benefits received from fertilizer and irrigation management used for the middle- and lower-storied crops. On the contrary, Papaya, Brinjal and Gourd yields were reduced by 21, 24 and 38%, respectively, due to competition among the components for resources. The overall yield in MSAS was increased remarkably, and the BCR and LER were more than 5 and 3, respectively. Farm environment was improved due to good combination of tree and crops. It was observed that farm income was increased by 182% in MSAS compared to previous sole Jackfruit system. Increasing production has positive impacts on income generation, livelihood and food securityfor the resource poor farmers.**

Keywords **– Multi-storied agroforestry system, Farm production, Better environment.**

INTRODUCTION

Bangladesh, an agro-based country, is one of the most densely populated countries in the world. Poor management, use of excessive agrochemicals and climate change are some key challenges for agricultural production. Besides, decreasing land-man ratio is big concern to feed the increasing population. Agroforestry is an integral part of the rural livelihood systems for centuries in Bangladesh and plays a key role in providing household food and energy securities, income and employment generation, investment opportunities and environmental protection (Miahetal., 2002). Various traditional and new agroforestry systems are practiced in different ecosystems of Bangladesh since time immemorial. However, the potential benefits of agroforestry are not being tapped due to lack of knowledge and technology. Terrace ecosystem covers 8% of the country`s total landmass. Agroforestry systems interrace ecosystem have already become an integral part of the rural livelihood systems. Among the different systems, Jackfruit based agroforestry system is the most dominant one. Nowadays, several new agroforestry production systems based on both fruit and timber species are practiced by the farmers (Miahand Hussain,2005). A model of MSAS has been developed for Terrace ecosystem in Bangladesh with the aim to improve productivity, income generation and farm environment through utilization of available resource, knowledge and technology.

METHODOLOGY

The study was conducted in Narsingdi district under Terrace ecosystem. A Jackfruit tree orchard was selected comprising 0.95 hectare of land with 29 trees. Sporadically few crops were grown in the orchard. The orchard was transformed to multi-storied agroforestry system (MSAS) keeping Jackfruit trees as upper-storied component; Papaya as middle-storied; and Brinjal and Gourd as lower-storied components. Yield and yield contributing characters of Jackfruit, Papaya, Brinjal and Gourds were recorded during harvest.

Farm environment in terms of soil moisture, temperature and light availability were measured throughout the growing period.

Benefit Cost Ratio (BCR): Cost-benefit analysis of production technology was done by estimating on-site and off-site costs and benefits of crop, fruit tree, land and environmental variables. BCR = Grossreturn / Total cost of Production.

Land Equivalent Ratio (LER): The comparative advantages of land use through agroforestry and traditional farming was evaluated through calculating LER=Xi/Xs+Yi/Ys; Where, X and Y are the component crops in intercrop (i) or sole crop (s).

RESULTS

Performance of Jackfruit: There were 29 jackfruit trees in the orchard with different ages. The fruit bearing trees in 2012 were 60.8%, which rose to 95.6% in 2013. The numberoffruitsperplant was increased from 10.9 to 17.1. However, fruit weight and size was decreased in 2013 compared to 2012(Table 1).

Table 1. Comparison of productivity of jackfruit trees during first (2012) and second year (2013).

Parameter	Year		% Change
	2012	2013	
Fruit bearing tree (%)	60.8	95.6	+57.14
Number of fruit/plant	10.9	17.1	+57.01
Fruit weight (kg)	16.8	15.2	-9.52
Fruit length (cm)	75.8	54.3	-28.36
Fruit diameter (cm)	38.2	28.6	-25.13

Performance of Papaya: Significantly the highest (117.97 kg) and lowest (71.75kg) fruit yields per plant were recorded in 2013 when grown in open condition and in 2012 under agroforestry condition, respectively (Table 2). On the contrary, fruit yield was moderate in 2013 under agroforestry condition (91.86kg/plant) and in 2012 under open field (90.13kg/plant).

Performance of Brinjal and Gourd: Yield per plant was significantly higher in open (control) condition than agroforestry treatment in both the years. In 2013, the highest (1.8kg) and lowest (1.4kg) yields

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per plant were recorded in open and under agroforestry system, respectively. Yields of Gourd were insignificsnt in open and agroforestry system (Table 2).

Table 2. Yield performace of Papaya, Brinjal and Bottle gourd during first (2012) and second year (2013).

Crop	Open		Agroforestry	
	2012	2013	2012	2013
Papaya	90.1b	117.9a	71.8b	91.9a
Brinjal	1.4b	1.8a	1.0b	1.4a
Gourd	14.3a	12.1a	17.2a	14.2a

Columns followed by the same letter are not significantly different among the treatments at 5% level by LSD.

Profitability: In 2012, the highest BCR (4.32) was recorded in Jackfruit+Papaya+Brinjal system, which was followed by Jackfruit+Brinjal system (3.92). The lowest BCR was noted in sole Brinjal followed by Papaya and Bottle gourd. Similar trend was found in 2013 where the highest (5.62) and lowest (3.24) BCR were calculated in agroforestry and sole Papaya system, respectively. Likewise, LER was the highest (3.07 and 3.18 in 2012 and 2013, respectively) in case of MSAS. The data indicated that it would require more than three times land for sole cropping to get similar yield obtained from MSAS (Table 3).

Table 3. Benefit-cost ratio (BCR) and land equivalent ration (LER) of sole and agroforestry systems during first (2012) and second year (2013).

System	BCR		LER	
	2012	2013	2012	2013
Jackfruit+Papaya	3.74	4.61	1.76	1.74
Jackfruit+Brinjal	3.92	5.42	1.63	1.63
Jackfruit+Bottle gourd	3.90	4.85	1.68	1.81
Jackfruit+Papaya+Brinjal	4.32	5.62	3.07	3.18
Sole Papaya	2.78	3.24	-	-
Sole Brinjal	3.57	4.57	-	-
Sole Gourd	3.11	4.47	-	-

DISCUSSION

Khan (2007) identified numerous Jackfruit based traditional and new agroforestry systems in Terrace ecosystem of Bangladesh. Among different systems, Jackfruit-Brinjal agroforestry system was the most dominant and profitable one. In this study a Jackfruit orchard was selected, where farmer sporadically grew vegetable with minimum plan, management and care. Jackfruit trees were kept as they are and considered as upper-storeied component (Plate 1). The age of the Jackfruit trees varied between 7 and 43 years and hence the growth, productivity and profitability varied widely. The overall production was increased as the number of fruit bearing tree has been increased by 57.14%. This might be due to enjoy of irrigation water and fertilizer, which was applied for under-storeied crops. Moreover, pest management was done to control trunk borer of jackfruit which might have helped to reduce the fruit drop and increased the number of fruits per plant. On the contrary, fruit size and individual fruit weight were decreased, might be due to higher bearing habit.

Yield reduction of Papaya, Brinjal and Gourd was observed in agroforestry system due to competition between tree and crop for light water and nutrients. In this study, water and nutrient were not so much limited as these resources were applied for crop production. However, light was the most limiting factor for understoried crops in MSAS. However, the overall yield in MSAS was increased remarkably due to vertical and spatial uses of land and sharing of resources. The BCR and LER were more than 5 and 3, respectively in MSAS indicting higher profitability and benefits over sole cropping.

Plate 1: Transformation of jackfruit orchard to MSAS.

CONCLUSIONS

People were not giving attendtion to their Jackfruit orchards for maximizing the benefits. Farmers were trained and transformed sole Jackfruit orchard to MSAS. Farm environment was improved due to good combination of trees and crops in MSAS. Soil moisture and temperature were conserved positively in agroforestry plots due to reduction of evaporation and transpiration losses. A large amount of biomass, diversified food, multiple products and shelters were obtained from different components of the system. It was observed that farm income was increased by 182% in MSAS compared to sole Jackfruit system of previous year.

Farm productivity and profitability have been increased significantly that might have positive impacts on employment and income generation, improve livelihood and living environment and ensure food security of the resource poor farmers.

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Enhancing direct access to food for favela residents: how the FoodRoof supports them to grow their own healthy food

Rob Roggema[1]

***Abstract* – At the scale of the entire globe it can be calculated that we produce enough food to feed nine billion people. Mathematically, this is possibly right. However, many (weak, poor) groups still do not have access to food. This paper reports a way to support these groups to gain access to healthy food. In Rio de Janeiro the residents in the favelas eat candy, potato chips, pre-wrapped cakes, and drink booze and soft-drinks: not the most healthy diet. The 'FoodRoof' is introduced to support local residents to grow their own healthy food. This FoodRoof is a design for an aquaponic food-system on the roof of an individual house. The first FoodRoof has been realised in 2014 in Cantagalo favela and provides fish, vegetables and herbs for the residents of the house beneath. The system closes cycles of nutrients, water and energy and prevents waste to be dumped in the water system and Guanabara Bay, an additional advantage. To complete the environmental benefits in an experimental setting it has been build from garbage out of the bay. In the paper the design and implementation of the FoodRoof will be described and the benefits, conditions and potential future improvements will be discussed.**
***Keywords* – foodroof, aquaponic, favela, social**

INTRODUCTION

Recent literature on food and slums often reports on the vulnerability, malnutrition and lack of food security in those areas (Build, 2010; Faye et al., 2011; Kimani-Murage et al., 2014; Mohan, 2015). Strange enough, comments on food in Brazilian favelas are far more positive (Flavors of Brazil, 2012; Rothman, 2014; Barchfield, 2013; Petrini, 2014), although these reports state the entrepreneurship of favela residents more than the food they eat themselves.

PROBLEM STATEMENT AND METHOD

The current global food system does not reach the people that need it most and it is very doubtful whether a future global food system will. Currently, the shops in Rio's favelas contain candy, chips, wrapped cakes, soda, beers or even stronger drinks. The children, if they go to school at all, eat a bag of potato chips for lunch, and for breakfast, and for dinner. At a very young age the kids start drinking, and follow an, everything but healthy, lifestyle. Could we provide food to people by giving them direct access to an individual food production system?If we can create a food-producing roof, a FoodRoof, which is easy to build, lightweight and can produce nutritious and healthy food for the family living beneath the roof people in the favelas might start to eat healthier, more nutritious food (Roggema, 2014a; Roggema et al., 2014). The research project is action research based and practice-oriented, and took place in an emergent anddynamic process. It started with a rough google-maps based inventory and analysis, and an exploratory visit, during which the idea was explained to as many interested organisations as possible, such as the Dutch Consulate, the State of Rio de Janeiro and EMOP, the governmental Public Works. Residents were contacted and the possibilities were discussed. The second phase contained the design process, which was conducted in the Netherlands, with frequent exchanges by email with the partners in Rio and the house owners in Cantagalo favela. The design was finalised with a manual, in English and Portuguese (Drissen and Broekhuis, 2014), and construction drawings, illustrating the dimensions and materials required for building the FoodRoof. Meanwhile local support, financially and mentally, was sought for implementation of the project. The third phase consisted of the realisation of the project in Cantagalo. A team of four builders, amongst which two students from VHL University, the local architect from EMOP, and the author, spend a week in the favela to build the FoodRoof. After this the operation of the roof is evaluated and steps for scaling up and follow up are taken.

THE CONCEPT

Introducing a food producing system in the favela comes with certain specific requirements. To be acceptable for the residents it has to be a system, which must be productive, is lightweight and easy to dismantle, closes cycles and is sustainable, and therefore makes use of proven technology.For these reasons an aquaponic system was chosen, which produces food through a sequence of fish tanks, worms, vegetable hydroponics and a vertical gutter system. The fish enrich the water with nutrients, which are filtered and modified by the worms in order to be taken up by the roots of the plants. This water based system uses the water as a carrier for nutrients after which the plants extract the nutrients from the water hence purifying the water before it is pumped back into the fish-tanks. This way the cycles of water, nutrients and waste are closed and with help of solar power the energy cycle too. There are already several good examples of realised systems, such as the biospheric project in Manchester (Keeffe, 2014; Roggema, 2014b), and projects in Amsterdam and Rotterdam in the Netherlands (Broekaert, 2012). In order to let the system function, water is required. In Rio, the annual rainfall is more than sufficient, but in order to use the water it needs to be captured and locally stored, preferably on the roof where it will be used. The first FoodRoof was built in Cantagalo in 2014. The roof of Marcelo Açunçao is located in the heart of the favela, along a busy street. In five days the materials have been bought and transported to the

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roof, where the fish-tanks are painted in catchy colours, the vertical gutters were put together and the horizontal vegetable plant-bed was installed. The tubes, pipes and pumps are connected to start the system. In the fish-tanks a total of 40 tilapias live, strawberry, pepperoni and tomatoes are grown in the plant-bed, and a range of herbs are planted in the vertical system. After five days the system was complete. During the building many residents from the neighbourhood cam over on the roof to help with the construction and helped out carrying stuff. By the end of the week the system was operational. After a week or two the system should be in balance and could be maintained with simple actions.

EVALUATION, DISCUSSION AND CONCLUSION

The evaluation of the first realised FoodRoof shows both successes and failures. The FoodRoof produces food and the system works. It prevents dirty water from ending up in Guanabara Bay and the house-owner and residents are enthusiastic. The main problem after realising the FoodRoof was the summer heat in Rio. The plants and fish had difficulties to deal with temperatures above 45 degrees and scorching solar radiation. The proposed sun cover of solar panels couldn't be realised, but would still be a useful solution for the heat and it would close the energy cycle, as the pumps currently retrieve their electricity from the grid. The materials were obtained from the local shop and materials shop. besides being expensive the use of new materials do not close the material cycle, and it would be better if the FoodRoof could be build with waste materials. Finally, the local embeddedness could be stronger. After the FoodRoof was build the positive vibe amongst the residents could have been used to start up more FoodRoofs in Cantagalo.

The question regarding the research approach is whether it should be structured and fixed beforehand, or if emergent ideas should inform the approach during the research. On a scale between these two this action research project may be hanging towards emerging ideas, it has at the same time brought new insights, new connections and new opportunities to realise the roof. This mutual information informed both the research project and practice. It proofed to be very fruitful, and without it the first FoodRoof would have probably never been build. Time will learn whether the roof will be used in the long term. For now, the owner is very happy with the roof and enthusiastic about the system. When this first FoodRoof remains the only one, it is deemed to end as a lone wolve: a strong proposition with no followers. The FoodRoof requires a follow up at larger scale, in order to profit from exchange of learning and the economies of scale in the production, while still be a solution for individual houses. It can be concluded that it is possible to develop a roof that provides the food for the family that lives under the roof. Local residents support the idea, but lack the organisation to extend the project, and they seem to be a bit apathetic and refuse to take initiative if it doesn't bring them direct profits. A rigorous research plan without risks would not have been successful in developing the FoodRoof. It is necessary to take a risk in the process in order to make things happen. Imagine, the research had been eloquent and the researcher had beenwaiting for acceptance of their ideas, the first FoodRoof still had to be build.

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Bridging "Agriculture Information gap" through ICT tools and use of Mobility, Analytics and Cloud in Agriculture even in the absence of internet

Anand Babu, Shivaprakash L., Hareesh U.[1]

***Abstract* – Ever since farmers growing crops, raising livestock and caught fish, they always sought for information. In past few decades several research and development initiatives in agriculture space put the farming in fast track. But those new agriculture inventions are not reaching the needy farmers due to information gap. Due to information gap, agriculture in developing country like India become "Input intensive" but NOT "knowledge intensive". As a result, agriculture becoming not profitable and farmers losing interest in farming and hence migrating to urban area in search of jobs. This polarization leading to several social problems. This problem remain persistent until agriculture become "Knowledge intensive" for which information is a key. The biggest conventional and historical barrier for agriculture information dissemination are "Illiteracy" and "Diversity" in developing country like India and other Asian and African countries. With the increased penetration of smartphones even in rural area, there is a huge potential to use their phones as primary tool of intervention to deliver the knowl-edge/information in constructive and simple manner. Jayalaxmi agrotech, a start-up impact first social entrepreneurship firm from rural India, developed several crop specific android mobile apps to address information gap. These application are built to break the literacy barrier and deliver the information in regional language with full of audio visuals. Suite of apps for agriculture, horticulture and animal husbandry are already been developed and released for farmers in multiple regional languages. Once installed, these apps can work offline without internet. These apps spread mainly through farmer to farmer multiplier effect without depending on internet. Within last five months since the launch, apps reached 20,000 individual farmers and impacted lives of at least 50,000 farmers. Its ability to provide end-to-end information in regional language with audio visuals without internet is key success factor. In south Indian states, today these apps are spreading and reaching one new farmer every 8th minutes and expected to reach one new farmer every minute in near future. As a result, farmer adopted better "Package of practices" with the help of our mobile apps, which in turn reduced the excessive use of pesticides and fertilizers. As per the preliminary survey conducted on our app users, overall agri-input cost cut down by 14% and productivity increased by 17% due to adoption of mobile apps in agriculture. App usage patterns by farmers will be tracked and insights generated through analytics.**

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***Keywords* – Agri mobile apps, Jayalaxmi agrotech, agri ICT solutions**

INTRODUCTION

In most of the developing countries farmers are still following conventional agriculture practices and hence agriculture is still not profitable. Information gap is primary reason for poor adoption of 'package of practices'. Diversity and illiteracy are major bottlenecks for agri extension programs for information dissemination.ICT solutions gaining important in agriculture. Although some SMS based and IVRS based solutions used in agri space, most of the solutions deal with weather and price, however farmer keen on information on agronomic practices (Ref 1). With the increase in smartphone penetration even in rural parts of developing countries, there is huge scope a use smartphone as tool of intervention for information dissemination. Although, smartphone penetration increasing in rural areas in developing countries like India, internet penetration is still long way to go and hence use of dynamic IT applications as ICT solutions are still not appropriate to reach large population of farmers. There is urgent need of some ICT solutions which can work offline which can work even on low-end smartphones (mainly android), simple yet relevant application in regional language are needed.

Jayalaxmi agrotech, a start-up impact first social entrepreneurship firm from rural India, developed several crop specific android mobile apps to address information gap.

METHODS

Mobile application are developed on android platform using android SDK and studio. Application are designed with at most care to break the literacy barrier and deliver the information. Authors being farmers, always through from farmers prospective while designing the apps for farmers. Suite of mobile applications developed on android platform for agriculture crops, Animal husbandry and Horticulture crops. Farmers can install crop app of his interest and language of his interest on his phone either from internet or from local govt agri-office or even through peer transfer from other farmers who already has app.

These apps are intuitive and serve as digital books with added features like reminder mechanism to drive the adoption of recommended "package of Practices' (POP) by agri-scientists. Some analytics techniques like decision tree concepts, break-even analysis etc are also included. For example, if farmer growing sugarcane, he can download our "sugarcane app"with language preference (Ex: sugarcane English). Once

downloaded, post registration, he will get unique password through SMS. Apps gives end-to-end information like, introduction about sugarcane, Verities, Planting methods, Disease & pest management, micro nutrient, firtigation, irrigation, harvesting, post harvesting etc. Once downloaded, farmer can use the app without internet. Local government agriculture department in Karnataka state India, also facilitated the information dissemination to farmers in Karnataka state. As the farmer uses the app, preloaded algorithms track the usage patterns and post the details to cloud based server. Even if the user not having internet connection, usage analytics will be posted to our cloud based server through sending compressed message as SMS to toll free number.

RESULTS AND DISCUSSIONS

Pilot study was con-ducted in few districts of southern Indian state Karnataka where most of the farmers speak local dilate called "Kannada". Suite of 20 different agriculture, animal husbandry and horticulture crops specific mobile apps in "Kannada language" are released. For first 4000 farmers, apps are manually transferred to farmer's android smart phone by extension team.

After that, farmers started sharing apps with other farmers through Bluetooth. Within few months of launch, apps are spreading and reaching one new farmer every 8th minute. With the support from government, reach expected to touch one new farmer every minute within next 6 months.

App usage pattern has been captured as the farmer browses the data (Ex: which pest related information farmer referring to and how frequently he is referring to) and such data used to generate several insights using analytics.

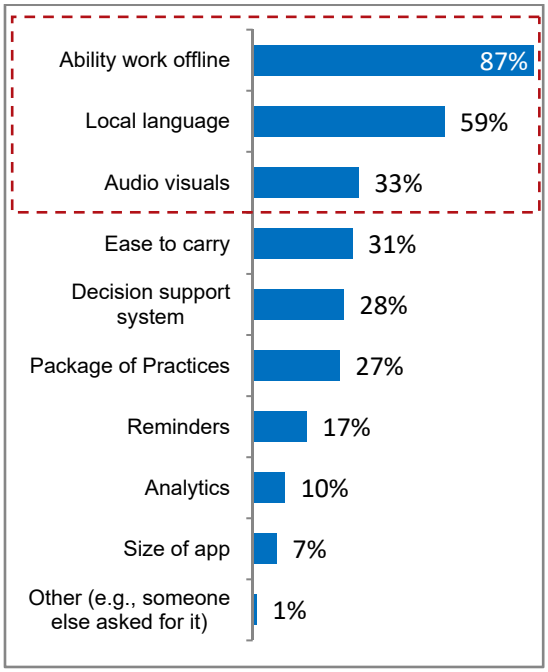

Figure 1: Survey results on "which feature farmer most liked in agri mobile app?"

It is evident from preliminary results that, with the use of these agriculture mobile appAgri-input cost down by 14% and productivity increased by 17%. Empowering farmers with valuable information driving adoption of 'package of practices' as a result better quality.

Some of the sugar factories in area where the pilot was conducted reported better cane quality as the farmers started using "sugarcane mobile app" and with its help farmers effectively managed incidence of pests and disease very quickly without much dependency on others.

User experience survey conducted on sample size of 300 farmers who used the agri mobile apps developed by authors. As per the survey results 87% farmers voted for ability of app working app offline.

CONCLUSIONS

Offline to semi offline smartphone mobile apps can be effectively used as intervention tool for information dissemination for farmers by leveraging the smartphone penetration in rural areas. Many farmers could be illiterates but they are best visual learners and hence such ICT solutions with audio visuals developed by Jayalaxmi agrotech are ideal to overcome information dissemination challenges faced by agri extension agencies where illiteracy and diversity further coupled with poor internet penetration. Advanced technologies like Mobility, Analytics and Cloud can be applied to agriculture economies where internet penetration is still low.

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REFERENCE LIST

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WG21 - Urban forestry, Green infrastructure

Cities are ecosystems: they are open and dynamic systems that utilize, transform and release material and energy. Cities develop and adapt as they interact with human beings and with other ecosystems. Therefore, they must be managed and protected like any other ecosystem. This need, and for the inclusion of community rights in territorial and landscape policies has resulted in the concept of "green infrastructure", i.e. an interconnected network of green spaces that conserves natural ecosystem values and functions and provides associated benefits to human populations.

In Europe, a multi-scale planning approach is emerging, ranging from local community level to regional, national and international platforms. The European Green Belt, the Pan-European Ecological Network and the European Green Infrastructure Strategy, launched in 2013, are good examples of an integrated series of directives, tools and actions oriented to implement multiple planning strategies and national/local actions on green infrastructure, especially urban forests. The European Green Infrastructure Strategy states that green infrastructure serves the interests of both people and nature. This definition completely reverses the urban-centric vision of the 20th century, by assuming that human activities and cities are hosted in nature and not the opposite.

The implications of this emerging vision are crucial in scientific and policy terms, and for all the disciplines dealing with the elements of green infrastructure, particularly for urban and periurban forestry, agroforestry and agriculture.

Urban agriculture is already recognized by citizens and local authorities as a strategic approach to combine a mosaic of green spaces in and around cities, contributing to the stabilization of migrant societies from rural areas, establishing natural ecosystems in cities and providing highly competitive markets close to consumers. The existing stakeholder platforms around this discipline offer a basis through which to incorporate trees, agroforestry and forests, which are critical elements of green infrastructure, in integrated land use, enabling urban and peri-urban forestry to make a direct economic contribution in terms of jobs and income generation, as well as institutional savings.

There is still a need, however, to discuss means and modalities for breaking the barriers between the different disciplines and ensure that there is full integration between the different elements that compose the green infrastructure of cities and in the interconnected urban-rural socio-ecosystem. Any framework for action should encompass both planning and management levels and aim to identify viable actions that can be adopted and implemented by the different stakeholders in the public and private sector.

Convenors:

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The importance of Urban Trees and Information Systems (UTIS) Approach

Tila Gul[1], Yilmaz Catal[2] , Erkan Polat[3], O. Kamil Orucu[4], O. Faruk Uzun[5], Emine Keles[5]

Abstract **– Trees are widely regarded as an integral component of urban ecosystems and landscape in cities. Urban trees provide numerous benefits that can improve environmental quality in urban areas and human health. In this study, it was firstly realized to a ArcGIS-based Urban Trees Information Systems (UTIS) approach in case Isparta/Turkey. This approach services to determine the current status with a healthy inventory, the digitization of ArcGIS, storing, to be made according to the intended purpose of data analysis, storage, to give of active decisions and sharing online.**

Keywords **- Urban trees, Information systems, ArcGIS**

INTRODUCTION

With the increasing urbanization in the 21th century, the incorporation of trees and forests into urban settlements has also increased to level that the planning and management of urban trees & forests with in the urban area is considered to be a multidisciplinary studies. The urban trees and forests provides numerous benefits that can improve environmental quality and human health in and around urban areas (Wolf, 1998; Serin & Gul 2006; Nowak & Dwyer, 2007; Gezer & Gul 2009). Trees are widely regarded as an integral component of urban ecosystems and landscape in cities. Trees and forests are, because of seasonal changes and their size, shape, and colour, the most prominent elements of urban nature.

In nowadays, as a result of multi-directional contributions and services of urban trees and forests in open and green spaces, the usage of urban trees are gradually increased in urban areas. For the sustainable of The City trees, it should require conscious and to holistic planning and management for urban trees. Therefore, the inventory and database of urban trees or forests should be made as scientific and technical. The existing urban trees are regarded as the most important natural data of urban information system. it is also required to reveal of the current situation (knowledge of the inventory), data storing, analysing, querying and its using in a systematic way.

Today, 'information age' as is considered. The use of knowledge and kept up to date are very important with have the information. The information system includes the storing, the analysis of the existing database and query according to user needs. The main objective of information systems present to alternative solutions to decision makers. New researches are continuously available that supports the importance of urban trees and forests, but the difficulty rests with the planning process for urban development. Therefore, UTIS should be integrated to urban information systems for urban management.

The objective of this study suggests to urban trees information system approach for provide urban trees structural data (e.g., number of trees, species composition, tree size, health, tree location,) for estimate total leaf areas, leaf biomass, and trees ecosystem services the basis to sustainable planning and managing of the urban trees. This model will help planners, city managers, and other decisionmakers for the urban trees.

MATERIAL AND METHODS

This study was realized to approach of a GIS-based Urban Trees Information Systems (UTIS) in case Isparta city in Turkey by sponsored TUBİTAK (Project#:110Y301). This Project started in 2011 and finished to end of 2014.

This study was consisted of five interrelated phases. a) The digital maps were obtained by support satellite image, b) Survey sites were determined, c) Inventory studies were realized in 43 districts of the City, d) Collected data were digitized, questioned, and analysed in ArcGIS based, e) 3D modelling of trees were carried in ArcGIS based, f) Obtained data was shared as online in WEB.

Inventory data of existing trees in the parks, boulevards and streets, which have been responsible by Isparta Municipality, were obtained by measurements and observations of each tree in field survey works. Tree inventory form has been contained tree code, location name and number, Latin, English and Turkish name, coordinates of tree, tree height (m), unbranched trunk height (m), diameter at breast height (DBH=d1.30 m), crown diameter (m), number of trunk, ages, form, reserved soil area, death case the percentage of tree crown, light exposure the percentage of crown, the percentage of losing crown (%), functional specifications, health status, tree defects, care and protection measures and others.

In each study area, tree inventory data (number of trees, species composition and distribution, tree age, height, diameter at breast height, crown diameter, functional characteristics, tree health, care and protection status, leaf surface area and leaf biomass) were analysed and obtained to % distribution in ArcGIS-based.

RESULTS AND DISCUSSION

According to analysed tree data, Isparta has total 46.254 tree numbers and different 80 tree species. The majority of trees determined broadleaves trees (70 %). There was approximately one tree for every four residents in the Isparta. Total crown shade of trees in study areas were covered approximately 6,6 % of the city. The predominant city tree species are Fraxinus excelcior L. (16 %), Platanus orientalis L. (10

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%), Pinus nigra subsp pallasiana (Lamb.) Holmboe (13 %), Cedrus libani (9 %), Robinia pseudoacacia "Umbraculifera" L. (8,6 %), Tilia tomentosa L. (5.5 %) and others. The majority of tree were between 11 and 20 years age groups (39 %), were between 3 and 6,9 meters height (63 %) and were between 6 and 12 inc DBH class groups (45 %). While the rate of healthy trees was 49,6 percent, there were some faults of trees [e.g., cut of crown (33 %), become bent of trunk (14,23 %) grow defects (18,7 %) and others). Total leaf areas of all trees were 264.244 hectares. The leaf biomass of all trees 248,513 tones. However, 3D modelling of trees were done in ArcGIS programme. Obtained data of trees were also opened online sharing by created WEB (http://kabsis.sdu.edu.tr).

The advantages of a ArcGIS-based Urban Trees Information Systems (UTIS) approach;

- Proposed approach is flexible, easily accessible, may be revised, can be improved, reusable, sustainable, adaptable, sharable, reliable, modular, compatible with other information systems, and cost-effective. Models also feature with fast and efficient operation.
- This may appear as digital of the features of all the individual and structural of the existing trees in urban and also provide to opportunities, assessment and interpretation.
- UTIS may integrate to urban information system and urban development plan. However, it helps to multipurpose urban decision making, the status determination and prepare to processes of planning and design.
- It can provide to multiple services for the creation of application programs and information includes tree planting, removal and protection for urban managers and planners.
- Obtained inventory data can used for ecosystem functional analysis with help to develop some models such as The Urban Forest Effects (UFORE) and Street Tree Resource Analysis Tools (STRATUM) by USDA Forest Service.
- It can be help the regulation of urban development plan and contribute as guide.

The most precise way to assess urban trees structure is to measure and record information on every tree (Nowak et al. 2008). In future, tree information will be to establish links between the environmental, social, economic and aesthetic functions of the urban trees, for instance to assess how mitigation of heat island effects and the improvement of air quality are related to human health. Collecting this information will support the development of urban forest policies on a strategic level (NUFU, 2002; Gezer & Gul 2009).

UTIS can also provide a great resource to the public and their communities. Many people know little about the trees in urban, but show some interest in learning about them. By having a general database illustrated on a map, the public can learn a great deal. The data can show residents about the benefits, tree conditions, costs of urban trees, and the entire urban trees and forest system (Wood, 1999). Urban residents can be educated on why it is important to manage trees and the benefits that can be taken from tree inventories.

CONCLUSIONS

Consequently, it is becoming increasingly understood that trees will be important ingredient in creating green cities of the future. The tree inventory is regarded as one of the main components of the systematic and structured management plan. The inventory studies, the results of measurements and observations must be obtained. UTIS approach serves to determine the current status with a healthy inventory, the digitization of GIS, storing, to be made according to the intended purpose of data analysis, storage, to give of active decisions and sharing the online data. The new approaches to urban trees management must be comprehensive, detailed inventory data and adaptive to allow for adjustments in management activities based on new information.

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The Aniene River. A Greenway between Roma and Tivoli

Anna L. Palazzo, Biancamaria Rizzo[1]

Abstract **– The last section of the Aniene River, a tributary of the Tiber, connects the ancient settlement of Tivoli to the Capital City. Tivoli, located 48 Km away from Rome in its eastern hinterland, is well renowned for its sulphur mineral water springs and for the exploitation of water re-sources in the impressive sceneries of Villa Adriana (II Century) and Villa d'Este (XVI Century). The long-lasting mutual interdependencies between Roma and Tivoli have been marked by a series of trade exchanges along the Aniene River and the Tiburtina Consular road: Tivoli's hills have always been producing high quality olive's oil. Quarries lengthwise have been providing a particular white calcium-carbonate rock – the "travertino" - used in building most Roman monuments. The water power of the Aniene falls has been exploited since the early industrial period for paper mills and ironworks factories. From the Twentieth Century onwards, the river has partly provided for the Capital's electricity needs.**

Nowadays, many plants along the Aniene River are abandoned and brownfields holding landmarks of industrial archeology lie among quarries, factories still in use, illegal settlements, large retail boxes and warehouses. Altogether, these dynamics account for environmental fragility and hazard, land use fragmentation and a general loss of "sense of place". Several issues and scales are at stake in the spatial strategy tackling the Aniene River as a green infrastructure (EU Commission, 2013): urban agriculture and urban greening practices, along with re-use schemes and small-scale solutions able to improve urban quality are called upon to improve the overall resilience within the area.

Keywords **– Aniene River; Urban Rural Fringe; Greenway; Resilience**

INTRODUCTION

Our research programme aims at addressing the manifold dimensions and capabilities of open space along the Aniene River between Rome and Tivoli comprising different landscapes varying from the typical urban and peri-urban features to the still predominantly rural ones.

This topic is relevant for at least two reasons. Generally speaking, within the urban rural fringe, the economic component with the transfer of products (especially food and artisan products) and the relational goods component (information, culture, traditions, well-being, health, leisure) are often intertwined (Pryor, 1976; Palazzo, 2005; Gallent, Andersson, Bianconi, 2006; Scott et alii, 2013).

More specifically, the Roman area is getting the status of a metropolitan city, collecting some 100 municipalities and 4 million inhabitants. Still, the appeal of the Capital City hardly goes beyond its core area, the "historical centre", the outstanding Unesco Site visited every year by more than 10 million tourists.

In turn, Tivoli hosts two Unesco Sites, Villa Adriana and Villa d'Este, but ranks only 29th among the tourist destinations in Italy. The overall idea of the Municipality of Tivoli is to improve the rail connection to Rome, and to enhance the living environment within and around the town in order to supply tourist flows with a powerful set of opportunities to be based in Tivoli.

MATERIALS AND METHODOLOGIES

The research relies on two distinct approaches:

1) The historical approach supported by literature and archive references, notably the ancient land registers, several regulations issued from the old Statutes and the most significant public works related to water systems management, in order to secure the manifold uses and perceptions of the Aniene River and its basin over time (Figs. 1, 2).
2) The anthropological approach providing a deep insight into current landscape patterns, supported both by a survey of current land uses and in-depth interviews to major stakeholders (administrators, citizens, farmers).

Both approaches deal with living materials, their natural evolution and their historical and current "values-in-use". Altogether, they convey a broad and inclusive notion of "landscape", seen as a visible and sensitive expression of environmental fragility.

Within this frame, the treatment of the Aniene River as a greenway can play a powerful role within a transparent, integrated and cooperative decision-making typical to strategic planning. In fact, land use fragmentation and loss of biodiversity should be addressed by means of greening and urban agriculture practices that are likely to increase the overall resilience and reduce the negative effects of the climate change as well.

The implementation of the greenway will involve, in addition to a general structural design of the area, also the processing of specific sections on the different types of landscape (Duany, 2002), and the drafting of guidelines useful to define rules, regulations, instructions, methodologies to be set forth by local authorities. For each of these landscape patterns, the river can play a different role. As regards the historical city (Città Giardino Aniene in Rome and the old town of Tivoli), it can be re-designed as an urban edge creating a more correct relationship, both formal and functional, between the built environment and the natural areas. As regards suburbs and peri-urban areas, the river can offer an occasion for social and environmental regeneration linked to urban agriculture, sport and leisure activities and to landscape protection. In the still rural areas, the river and its environment are to be connected to the surrounding settlement patterns by re-generating ecological networks, creating thematic paths and

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encouraging new forms of sustainable tourism based on the discovery of pre-industrial activities located along the river (paper mills, ironworks factories, hydropower stations).

The "landscape project" offers the ideal ground where to comprehend and guide future transformations, focusing on different aspects (Berger, 2006): landscape as a biodiversity reservoir, as the scenery of outstanding cultural heritage, as the relevant backdrop of ordinary life. In the dimension of space, "landscape as a project" should provide guidelines for reshaping settlement patterns dealing with "feature" and "size" issues at any scale. In the dimension of time, it encompasses processes related to environmental sciences, notably vegetal reproductive cycles, or calls upon the treatment of unresolved places, implying actions of landscape completion and even reinvention.

CONCLUSIONS

In our research, the point is to come to grips with an idea of resilience embedding spatial coherence and landscape connectivity both at the local and territorial scale. The whole area lies under different planning tools (Municipal Master Plans, Landscape Plan, Tiber River Basin Plan, Regional Reserve of the Aniene River, District Plan, World Heritage Management Plan...), to which the idea of the Green Infrastructure will necessarily be linked.

How to manage such a complexity? Our resilience Agenda for the Aniene River meets on its path a general public massive mobilization, claiming for an institutional strategy to be shared by all stake-holders.

All over Europe, the River Contracts (Directive 2000/60/EC) have become effective tools in order to implement "a system of rules in which the criteria of public utilities, economic profitability, social value and environmental awareness are equally involved in the research for effective solutions" (The 2000 World Water Forum). The Directive, originated by sectorial needs, has gradually involved public and private bodies committed to comprehensive practices combining large scale planning methodologies with local scale arrangements through a "living laboratory approach" (Bastiani, 2011).

The ongoing Aniene River Contract is expected to take into due account local peculiarities and issues about land consumption, preservation of natural and landscape values, improvement of environmental performances by fitting land protection rules.

Figure 1. Overlap between the current map of the Municipality of Tivoli and the land register in 1819 (Catasto Gregoriano).

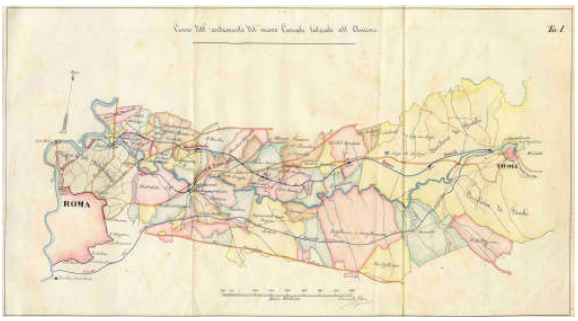

Figure 2. Hypothesis for a side channel to the Aniene River (80s of the XIXth Century).

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Urban green and urban agriculture: a natural alliance

Anna Chiesura, Marzia Mirabile, Silvia Brini[1]

***Abstract* – Urban forests and green infrastructures encompass not only public green spaces in their diverse typologies (parks, gardens, playgrounds, street trees, green walls/roofs etc.) but also agricultural areas. Green spaces and agricultural areas are both multifunctional resources, each fulfilling multiple needs, from environmental quality to recreation, passing through food security, biodiversity and social farming. Data collected about urban nature in 73 major Italian cities for the X ISPRA's annual Report "Urban Environmental Quality" confirm the great diversity of natural and seminatural areas present in our cities and the relatively high portion of land used for agriculture found in many of them. Despite their strong decrease over the last 30 years, they still cover a significant part of municipal area in some cities, mainly in the South, where - on the contrary - green spaces are often lacking. Moreover, they often have high naturalist values, being included in natural protected areas and/or in the Natura 2000 network. It is argued that spatial planning should strengthen the link between agricultural areas and public green as complementary resources, so that they can both continue providing their valuable environmental and socio-economic services to an increasingly urbanized society.**
***Keywords* – agricultural areas, green infrastructure, integrated lands use planning**

INTRODUCTION

Green infrastructures are being increasingly considered within the urban agenda for their multiple environmental and social benefits (TEEB, 2011). The presence and availability of green spaces such as parks and gardens are in fact good indicators of urban environmental quality and of attractive places where to live and work (European Union, 2010; 2013). On the other hand, less attention seems to be paid to agricultural lands as part of the green infrastructure of the urban fabric, and as fundamental asset for local sustainability. Data from ISPRA Xth Report "Urban environmental quality" (ISPRA, 2014) show that, despite a general contraction over the last 30 years, agriculture covers a relevant portion of municipal land in many cities, mainly in Southern Italy, where – interestingly enough - urban green is often lacking. It is argued that public green and urban agriculture deliver multiple and mutuallysupportive ecosystem services: if well-planned and sustainably managed, in fact, agriculture can benefit green spaces in many ways and vice versa, with many positive impacts at various scales. Local policies on urban planning should therefore look at them in an integrated way, in the effort of strengthen eachothers' functions and values, so that they can possibly become viable solutions among alternative land uses (residential, commercial, infrastructural).

METHODS

Data presented here come from the Xth ISPRA "Urban environmental quality" Report, where a sample of 73 Italian cities with population > 50.000 inhabitants has been investigated (the complete work can be downloaded at www.areeurbane.isprambiente.it – in Italian) and where data on public green (gathered by ISTAT, the Italian National Institute of Statistics, through annual survey at municipal level) and urban agriculture (gathered by the same Institute through the VIth Agricultural General Census (http://www.istat.it/en/agricultural-census) are elaborated and analysed. For the purpose of this paper four indicators have been selected out:

1. percentage of agricultural lands over total municipal land (year 2010; column a in Table 1);
2. 1982-2010 variation of agricultural lands (year 2010; column b in Table 1);
3. percentage of urban green spaces over total municipal land (year 2013; column c in Table 1);
4. percentage of natural areas under legal protection for biodiversity conservation and of areas included in the Nature 2000 network (year 2013; column d in Table 1). For space reasons, in Table 1 only data of the first 30 cities with a relative agricultural cover > 1/3 are reported.

RESULTS

The following major findings emerge from a descriptive analysis of the quantitative data:

- agricultural land has generally decreased throughout the time series considered (1982-2010) with highest values reaching up to 80% of agricultural lands lost within the last 30 years (column b);
- despite that, agriculture represents a relevant type of land use: in 47 cities out of 73 more than 1/3 of municipal land is dedicated to agriculture (column a), starting from Rome, with its 33,6% of agricultural lands;
- urban green is also represented by natural protected areas and/or Natura 2000 sites (column d): this means high naturalistic values, biodiversity hotspots for rare/endangered species and habitats of European interest.

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Table 1. Agricultural lands (a), urban green (c) and protected areas (d) in 30 major Italian cities: relative cover over total municipal surface and variation of agricultural lands 2010/1982 (b) (%)[a]

Cities	a) agri-cultural lands	b) trend 1982-2010	c) urban green	d) pro-tected areas
Alessandria	90,6	20,1	1,4	0
Foggia	88,1	-6,3	0,2	3,7
Vicenza	79,2	35,8	3,8	0,9
Reggio nell'Emilia	72,5	-7	4,3	1,3
Andria	71,7	-17,5	0,3	36,1
Matera	70,2	-11,4	15,3	24,9
Firenze	69,8	115,6	7	1,7
Ferrara	68,8	-1,6	1,5	3,2
Forlì	67,2	-3,4	1,1	3,2
Parma	64,0	-12,4	2,2	1,8
Ravenna	63,4	4	0,9	29,1
Ragusa	63,0	-20,8	0,4	6,5
Padova	60,3	76,7	8,8	0,1
Barletta	57,7	-38	0,4	29,3
Novara	55,9	-6,4	7,4	0
Benevento	55,5	-18,3	0,9	0
Brindisi	54,5	-4,5	0,3	10,4
Viterbo	54,2	-1,4	0,3	5
Sassari	53,3	-26,2	0,8	2,6
Siracusa	51,0	-26,5	0,4	5,7
Potenza	50,6	-21,4	14,2	0,8
Rimini	49,9	-13,4	2,7	0,5
Piacenza	49,2	-12,1	2,4	13,7
Modena	48,5	-27,9	4,9	0,8
Ancona	47,7	-16,7	1,8	26,2
Pesaro	47,5	-15	1,5	20,6
Campobasso	47,0	-31,1	1,5	3,7
Aosta	46,4	12,7	2,5	0,4
Catanzaro	46,2	-39	3,8	0
Bari	45,0	-3,4	2,1	2

Source: ISPRA elaboration from ISTAT data (see Chiesura and Mirabile, 2014; Greco and Moretti, 2014)

[a] Note: data in a), c) and d) cannot be summarized up since overlappings often exist between agricultural areas, urban green and protected areas (see Roma Natura sites).

Discussion

Often ubicated where the building of houses and infrastructures has happened to be more convenient to development goals, agricultural lands in/around cities has generally decreased over the past 30 years due to urbanization. If this has led on the one hand to a loss of productive and fertile land, on the other it has allowed a closer and diffuse contact between urban dwellers with the periurban hinterland and the surrounding boundaries of the cities, where agriculture (but also fishery and forestry) typically (still) takes place. Therefore, urban and periurban agriculture is embedded in and interacting with cities' social and economic life. Furthermore, public parks and protected areas often include private agricultural lands, making green infrastructures places where social and recreation functions are potentially intertwined with productive and/or ecological functions.

It is argued that such a spatial contiguity between agricultural areas, urban forests, gardens, natural reserves and other public green spaces opens up opportunities for new environmental and social values generation both for rural and urban communities: through the integration of eachothers' functions and services, in fact, agricultural land and public green can strengthen their role as strategic assets for future resilient cities. Landscape amenity and rural tourism of multifunctional agriculture, for example, can well be integrated with environmental education and green tourism in more urbanized public green spaces such as parks and gardens, while the supply of local food (preferably from organic/social farming) can take advantages of the increased social demand from urban dwellers for quality products and find suitable markets in designated green areas. Public green spaces and urban agriculture should be seen as allies in the search of more sustainable and resilient cities.

Therefore, a new "rurban governance" needs to be created between urban agriculture and urban green areas, through for example innovative regulatory or financial instruments where farmers and managers of public spaces can act together in a private-public partnership. Land use planning and local policies should therefore put more efforts in integrating the two sectors and in involving their stakeholders in an organic strategy for green infrastructures able to look at green spaces and periurban agriculture as complementary assets and mutually-supportive resources.

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Urban Forests in Senigallia: a project from Green Masterplan

A. Minelli, I. Pasini[1]

***Abstract* – In 2010 Senigallia requested to the Agricultural Department of Bologna to draft a Green Masterplan (GM) to increase the value of the local green areas. Aim of the request is to have a better connection between the existing areas with, as a consequence, an improvement of the quality of the life for the residents. The GM was approved during the same year and many projects were proposed. In this article is shared a proposal to reduce the CO_2, produced by the extension of the highway, with a creation of 2 big urban forests (UF).**
***Keywords* – urban forests, green masterplan, CO_2 sequestration, green park**

INTRODUCTION

At the beginning of the '80, Italy was influenced by foreign countries to create new urban green spaces, projected and created in different ways from usual schemes. The main idea was to create areas that look like as natural as possible, mainly composed by native species strong enough to the human pressure. Those green areas have to protect and improve the environment, they need to follow simple landscape schemes with low costs of installation and management. We can summarize the concept in 2 words: "urban forest" (UF). If we analyze those 2 words, they are antithetical cause we define:

- forest as a natural and biological entity, made by different but balanced ecosystems.
- urban as a combination of artificial elements together with an ecological disorder and pollution.

The UF can be considered as multifunctional forest, located close by the cities. It has different functions, as protection and environmental improvement and it is important for psychological and social effects. Many cities and conurbations, in the recent decades, have invested conceptually and economically on UF. Recently in Italy, there were several proposals for the creation of UF, born to offset the CO_2 emissions, released from specific buildings. In 2010 Senigallia requested to the Agricultural and Engineering Departments of Bologna to draft a GM to increase the value of the local green areas. Aim of the request is to have a better connection between the existing areas with, as a consequence, an improvement of the quality of the life for the residents. Bologna University puts in place and coordinated a technical team composed by 4 architects, 2 agronomists and some technicians of Green urban and Urbanistic Offices of the municipality. This team involved local people in several steps of the project to receive proper feedback and progress in a correct way during the work. The proposals included in GM are based on specific analysis related to historical and environmental info, infrastructural analysis and considering always the relation between different buildings and built areas and urban green. The GM defined priority goals, guidelines for the green management and suggestions for specific urban areas. The GM was created and approved in 2010 and all the analysis showed that this GM is feasible and sustainable and ready to be implemented, so many specific projects were proposed. In this article is shared a proposal to reduce the CO_2, produced by the extension of the motorway, with a creation of 2 big UF. The choice of species, the planting pattern and the breadth of surfaces want to optimize the sequestration of CO_2 and reduce the air and acoustic pollution.

DESCRIPTION OF THE AREAS

The two areas, proposed for the creation of UF, are respectively located in the Northern (Cesanella) and in the Southern area (Saline) of the conurbation of Senigallia and they fill on a surface respectively of 8 and 5 hectares. The first area is only a fragment of a larger area of about 15 ha, that has not yet suffered the high urban expansion, for this reason it is characterized by the presence of cultivated and uncultivated fields. The second area, instead, is part of a larger area of about 9 ha, that includes sport facilities and looks like as a wide and abandoned humid area, characterized by the almost absolute presence of cane thicket. Neither of the areas is actually very crowded: people only use the cycle paths that easily connect these areas with the urban center, touristic and sportive zones and, at the same time, hill and coast. Both zones, in fact are located in an area that is between the coast and the hill ridge, but their delimitation is also determined by the presence of A14 highway, that divides the agricultural land and the urban center, and by the presence of Adriatica motorway and railroad that divide urban center and coast. The actual town planning scheme of Senigallia identifies both areas as zones designed as public park. The project here described is in coherence with MTP and GM of the Municipality of Senigallia.

PURPOSES AND METHODOLOGY

The idea is to create two areas, conceived as urban park/forest in an innovative and utilitarian way. This opportunity could represent a great occasion for Senigallia, that now has mostly small or medium size green spaces. The idea of urban park has been converted in UF to increase the compensatory function, consequent to the expansion of highway, that has determined the extension of A14 and the realization of another 4 lane road. The Environmental and Land Protection Ministry gave its positive evaluation to the environmental compatibility of the extension of A14 and the realization of 4 lanes road only if some prescriptions were respected. One of such prescriptions requires the municipality to provide a plan finalized to the reforestation with native plants of mostly some regional abandoned areas or with hydrogeological risks, according with Kyoto Protocol about the carbon adsorption, released in atmosphere. In particular *"the areas must be identified, in according to Marche Region, that will also define the acquisition and management mode of these areas".* This means that Marche Region is strongly implicated

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to fulfill these prescriptions, for which some concrete actions have already begun. The areas of Cesanella and Saline have been reported by Marche region as suitable areas for the reforestation. The chosen areas are located near the coast and in municipalities that have suitable surfaces and particularly features (fertility, water availability, etc.) necessary for forestation. The Regional Forest Act defines a forest as: *"every soil covered by woody vegetation, associated or not to shrubbery, with natural or artificial origin and in every phase of development, with a minimum surface of 2000 m^2, a minimum width of 20 m and a minimum coverage (crown area)of 20%"*. In this case, however, the project has considered the definition of forest, given by "Report on the determination of Italy's assigned amount under Article 7, paragraph 4, of the Kyoto Protocol" of Environmental Ministry (2006). In this document the parameters considered for fulfill the Kyoto Protocol are determined by: minimum surface of 0,5 ha, coverage of canopy of trees of 10%, minimum height of trees of 5 m. The project wants to promote the use of most regional common forest types, considering the tons CO_2/ha/year sequestrated by the different species that form the different wooded formations. The CO_2 adsorption capability of woods, instead, is evaluated by the sink, that can be considered as the variation of adsorbed carbon in the epigeous biomass of trees. The sink gives a prudential evaluation of adsorbed carbon, because it does not consider the amount of carbon adsorbed by hypogeum biomass and by the soil (hypogeum biomass + soil = stock). The unitary sink of forests of Marche is evaluated both for forest category, both for structural typology: the medium values are respectively: 1,76 t/ha/year and 1,54 t/ha/year of C. These values represented references very important, that have been considered as threshold to avoid to overestimate the sink capability of forest formations that have to be realized. Those are the main drivers to guide the Senigallia Municipality and Marche region to startup this project. The urban park/forest will absolve social, recreational and environmental functions.

RESULTS

The urban context to which Cesanella and Saline belong, has proposed a project based on rigid geometry of the main planting patterns, interrupted by punctual elements represented by *Pinus pinea* rows, creating sinuous bands opposing to the rigid wooded formations. The basic module is represented by a triangle which, repeated in different dimensions and shapes, constitutes the blocks, conceived as different wooded formations. 7 and 4 are respectively the blocks that are proposed for the area of Cesanella and Saline. Each area is divided into different zones (triangles), which are separated each other by many green lawn corridors, that have different dimensions. These corridors will promote a bigger use of the forest by people; they will connect more easily the existent cycle paths with those that are proposed by this project and, finally, they will increase the safety degree of the area, that will become wider and less oppressive. In particular, wooded formations, that have been proposed for the area of Cesanella are: mixed hardwood (block 1), forest of *Carpinus betulus* and *Fraxinus ornus* (block n. 2), forest of *Quercus ilex* (blocks n. 3, 5, 7), forest of *Quercus pubescens* (blocks n. 4,6). Wooded formations proposed for the area of Saline are: mixed hardwood (blocks n. 1,3), riparian zone (blocks n. 2, 4). All the areas involve the creation of 4 different forestry categories for the area of Cesanella and 2 for the area of Saline. The choice of forest typologies and species for the rows is not only determined by the location of the areas, situated between the coast and the agricultural fields, presenting typical species of regional countryside, but also by the soil nature, which promote the growth of many hygrophilous species especially for the area of Saline. The integration of the two different landscapes, that characterize the terri-tory, is realized by the proposal of typical species of the two different environments. In particular, for the species that do not belong to the wooded formations, the proposal of *Pinus pinea* rows will commemorate the maritime pine forests and the Mediterranean vegetation, typical of these zones. The *Pinus pinea* is also a very big tree, so the rows will mark strong lines, able to characterize the two areas. The hilly agrarian landscape is, instead, evoked by the choice of rows of *Morus alba*, that will form a straight line perpendicular to the coast along the existing cycle paths and/or along the proposed cycled paths. The *Morus alba* is, in fact, a characteristic element of rural landscape of Marche region. Rural landscape and coastal landscape are so united and they create a visual continuity. The choice of different forest typologies derives from the desire to use the most common forest types of regional landscape and it is also based on the correct landscaping. The species chosen are, in fact, suitable to the landscape, because they are native plants, that grow spontaneously in similar areas. They are also included on the list of recommended plants of GM of the Municipality of Senigallia. It is also based on the considerations about the tons CO_2/ha/year sequestrated by the different species that form the different wooded formations. In order to estimate the absorption capability of C of new wooded formations the project considered the sink of each forest category, that will be planted, also considering the local factors of the areas where wooded formations will be planted. The sinks are the following: riparian formation (8,432 t/ha/year of CO_2), forest of *Quercus pubescens* (4,216 t/ha/year of CO_2), forest of *Carpinus betulus* and *Fraxinus ornus* (4,876 t/ha/year of CO_2), forest of *Quercus ilex* (9,092 t/ha/year of CO_2), forest of shrubs (2,383 t/ha/year of CO_2), mixed hardwood (4,363 t/ha/year of CO_2 - Nowak).The total amount of CO2 absorbed by forest formations are respectively 36,33 t/year for Cesanella (54.009 m^2) and 18,01 t/year for Saline (29.683 m^2).

CONCLUSIONS

The different forest formations will be the CO_2 tanks and in addition they will be also relaxed and pleasured places, having the function to screen unpleasant landscape. This project is interesting for different perspectives: environmental, economic and social; it is a multifunctional and sustainable project.

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WG22 - Food System Transitions: Cities and the Strategic Management of Food Practices

Socio-technical systems like food are composed of and shaped by the everyday practices that are performed in specific places. Transitioning large-scale systems involves changing the practices that constitute and reproduce them. This is true of the food system, which is enacted by the repetitive performances of everyday food activities (e.g., shopping, cooking, discarding) in communities.

Cities are uniquely positioned to change food practices, and by doing so transition socio-technical regimes like food to sustainability. Cities are tightly bundled agglomerations of everyday practices, and are the stages on which healthier and more sustainable practices are performed, repeatedly, until they become normal, everyday activities. Municipal policies, programs, and infrastructure influence practices, while activists, spiritual leaders, media, teachers and other urban thought leaders shape our understanding of practices. By strategically influencing food practices, cities can potentially advance public health, improve the environment and economy, and ultimately transform the food system.

This working group explores the potential for cities to advance transitions through the strategic management of everyday food practices, arguing that a social practice framework is a more productive lens to examine the urban levers of food system change than transition theories that emphasize the disruptive potential of semi-protected niches. We will investigate the extent to which theories of social practice shed light on how changes in food practices transform the food system, the role of cities in fostering transformation through the support of sustainable food practices, and methods to map practices and the elements that shape them.

We intend to explore how cities and civil society groups have facilitated the adoption, implementation, and normalization of practices through changes to the elements of practices – the meanings attributed to a practice, its material dimensions, and the competences required for practitioners to engage in the practice. We will examine food practices that represent changes in local practices that affect different segments of the dominant food regime (e.g., urban agriculture, shopping at farmers markets, food recycling), which will illustrate how city governments and city-based civil society groups have influenced the adoption, implementation and normalization of sustainable food practices. We invite presentations of specific cases, proposed methodologies for food practice scholarship, and discussions about the social practice framework.

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Potentialities of practice-oriented sustainable food planning

An exploratory ethnographic analysis of food practices in two community gardens in Amsterdam and Berlin and the ways they impact land use

Beatriz Pineda Revilla, Arnold van der Valk[1]

***Abstract* – Since the financial crisis started in 2008, building projects were cancelled or postponed, resulting in an increase of derelict sites in cities. The situation of these vacant areas can be perceived both as a drawback and an opportunity for urban dwellers to develop self-organizational skills and play a more active role in the process of city making. The current study investigates two community gardens on vacant land, in Amsterdam and Berlin, as examples of self-organized initiatives. The paper explores how vacant space and self-organization and the ensuing temporary land uses can generate conditions for the emergence of sustainable food practices, such as growing food locally and cooking and other related practices such as composting, beekeeping and cycling. Using the lens of social practice theory and applying ethnographic methods, this study analyzes the constitutive elements of sustainable food practices (material, meanings and competences) and explores pathways towards sustainable food planning policies.**

***Keywords* – practice-oriented sustainable food planning, social practice theory, spatial food practices, Amsterdam, Berlin, urban food growing, food retail.**

INTRODUCTION

Food is hot, planning is not. Food is perceived by scholars and policy makers as a lever with the ability to link different fields such as public health, job creation, decreasing urban transportation, promoting sustainability, recreation and social cohesion (Grin, 2010; Spaargaren et al., 2012; Roberts, 2014). In the twentieth century food growing was considered to be antithetical to urban life in developed countries, a phenomenon relegated to the pre-industrial era. In recent years however it has attracted interest from scientists, the press and politics (Veen, 2015). Conventional urban and regional planning has lost its attraction in the face of growing complexity and uncertainty and it has developed consequent societal opposition against social engineering and grand designs. Spatial planning dogmas are contested and planning scholars are challenged to develop novel heuristics and strategies aligned with emerging practices of self-organization, participation and multifunctional land uses (De Roo and Rauws, 2012). Some scholars feel that there are no reliable means of steering or governing comprehensive transformations other than building networks and creating material and institutional conditions (Shove et al., 2012). At the interface of derelict sites, community gardens, food activism and self-organization, we investigate the potentialities and limitations of a novel social practice oriented perspective on planning and policy making.

This paper reflects upon fieldwork in progress. Contours of social practice theory (SPT) are sketched out to better understand situated food related practices in two well-delineated cases of (alternative) food networks in the cities of Amsterdam and Berlin, respectively. Questions asked:

- What is the role of vacant urban spaces and selforganization processes in the emergence of sustainable (food) practices?
- Do these practices affect the worldview, the skills and the material conditions of the people involved?
- To what extent do people consume foods produced in the city?
- Which territorial impacts are implied on the production site and outside?

SPT provides building blocks for a new type of planning and policy guidance focusing on daily practices. SPT is a newly developed body of knowledge in sociology and transition studies which builds on the works of Bourdieu, Giddens and Schatzki. Practices are the things people do, think and say to achieve their goals in life. Practices may exist as discrete actions, but typically are part of interconnected bundles of practices. Society determines and reinforces the selection and integration of the elements through shared understandings of 'normality' - what is considered the ordinary and appropriate way of doing things. A practice is defined as concrete human activity, a routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge, in the form of understanding, know-how, states of emotion and motivational knowledge (Shove et al., 2012; Veen, 2015; Cohen and Ilieva, 2015). Put otherwise, practices consist of 'material' (equipment; technology; infrastructure), 'meaning' (images; discourses, representations) and 'competence' (skills; know-how). Theories of practice contrast with conventional theories of behaviour and governance. With respect to governance the emphasis rests on facilitation, obstruction, the availability and circulation of the elements (materials, meanings, competences) of which sustainable food practices are formed.

METHODS

The research methods used are qualitative. First, an ethnographic approach is combined with semistructured interviews with gardeners and experts in order to produce a description of food practices and an analysis of how practices evolve in time and compete or strengthen other food and food related

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practices. Secondly, participant observation is used for the identification of material, meanings and competences of the practices under consideration. This implied taking field notes and using visual media.

OOST INDISCH GROEN (OIG) IN AMSTERDAM AND ALLMENDE KONTOR (AK) IN BERLIN

OIG is a group of spirited neighbours who in 2012 started developing a green hub for the Indische Buurt, a predominantly low-income neighbourhood in the district of Amsterdam East. Thanks to the economic support of the city council, the initiators realised their dream and created a community garden, made by and for the residents. Also they built a communal kitchen for the preparation of the fresh foods grown in the garden. Since 2012, numerous green initiatives have sprouted in the area inspired by this green hub and the local city council has encouraged OIG to take up a leading role in the promotion of active citizenship in the neighbourhood. Today OIG is a core partner in this network of green initiatives and is involved in different projects to promote heathy eating and prevent obesity.

OIG contributes to the transformation of the practices of growing urban food and cooking, by changing the meaning of these two practices and by providing a platform where people can learn new skills and exchange competences. For most of the gardeners growing urban food has mainly an educational function. It brings people closer to nature and it beautifies the living environment. Even so, some green thumb gardeners are proving that considerable amounts of food can be grown in relatively small urban spaces. Besides, the support received from the local city council, which is providing citizens with the space and resources (material) to implement and maintain this garden, is contributing as well to the flourishing of the practice of growing urban food in this neighborhood. OIG exemplifies how two practices, 'growing urban food' and 'cooking', reinforced each other. The initiators started organizing informal meetings to talk about cooking, "What is cooking for you? Which memories related to cooking do you have? What do you need in the kitchen to cook?" This way, participants re-learned latent competences and became aware of the importance of material elements such as fire, wood and having an oven. They also (re-)experienced related practices such as collecting and exchanging recipes and chopping wood.

AK in Berlin is situated on the site of the former Tempelhof Airport in the neighborhood of Neukölln. In 2011 a group of 13 pioneers initiated a community garden in the newly established public
park, which was the result of several years of conflicts between the Berlin authorities, the squatter movement and the local inhabitants. Thanks to a referendum in 2014 the park and the community garden will remain intact over the coming years while the plans for the construction of apartment buildings and commercial spaces have been stalled. The community garden takes up 5000 m2 of (polluted) land and it has more than 250 raised beds.

AK is contributing to the transformation of the practice of growing urban food. Material aspects pertain to the construction of raised beds, storage of gardening tools, composting and beekeeping. The gardeners show a variety of skills which range from building raised beds to soil treating and growing vegetables/herbs. Some gardeners learned how to grow food in their childhood in their countries of origin, others have learned from past experiences in other gardens. Most of them state that they are learning at the garden 'while doing' and by exchanging knowledge with others. The meaning of growing food is multifarious. For a small group of gardeners, growing food at AK is a matter of food security. For many it means empowerment. It gives them a reason to be active and part of society (especially if they are unemployed). For most it is a hobby, a way to be outside and in contact with nature.

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Urban strategies and practices for agriculture and food: six Mediterranean case studies

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Abstract – This paper discusses the role of cities and local governments in the implementation of strategies for sustainable urban food systems. In six Mediterranean metropolitan regions we analyze urban policies and agricultural practices, along with the political processes involved. The comparison confirms that cities are pertinent actors, capable of encouraging new practices and transversal governance. Nevertheless, questions remain concerning their ability to mobilize the agricultural community, and civil society in general, both elements crucial to the sustainability of any agricultural and food strategy. In concluding, we discuss the conditions that could lead to the emergence and implementation of sustainable urban food systems.
Keywords – Urban agriculture, Agricultural Practices, Public policies, Urban food system, Sustainability.

INTRODUCTION

The Mediterranean region is confronted with significant urban growth and increasing food insecurity. The population is expected to increase (from 446 million in 2000 to 570 million in 2025) and will remain concentrated in cities and along coastlines where it is strongly dependent on food imports, especially on the Southern coast of the Mediterranean.

Responding to this context, some cities have recently developed food and agricultural strategies from a food security perspective that seeks to renew and strengthen links with local agricultural production. These strategies involve various initiatives: the development of shorter supply chains and alternative food networks, the support of urban agriculture and gardening, public plans for farmland preservation, and actions such as local procurement for school meals or farm-to-school initiatives. Northern Mediterranean cities like Milan, Barcelona, and Lisbon have created and developed ambitious policies that address these food and agriculture issues. However these pioneers should not be considered representative of Mediterranean cities en general.

Depending on urban contexts, there is a large diversity of urban strategies addressing (or failing to address) agriculture and food issues. Do these examples reveal a transition towards new urban and agricultural strategies for food production and security in the Mediterranean? What causes these cities to take up the banner of food and agriculture issues, and act on them? What kind of food production systems and agricultural practices are being conceived, adopted, and implemented through these urban strategies?

FRAMEWORK AND METHODOLOGY

To respond to these questions, we describe and compare the policies and practices related to agriculture and food in six urban regions along the northern and southern coast of the Mediterranean. In each case, we approach the relationships between the city and agriculture through the concept of an "agri-urban system" (Valette et al., 2012). This perspective allows us to identify city-agriculture relationships, and analyze their dynamics, including the roles played by various actors and the relevant forms of governance.

Our results reveal three principal aspects: 1) The question of food is not necessarily a problem for the agricultural and urban actors in the metropolitan areas studied; 2) When seeking to spread and encourage the emergence of new food practices, urban governments have difficulty overcoming sectoral logistics; and 3) The link between emerging agricultural and food practices and urban policies is only just beginning to materialize.

With the intention of contributing to the debates of S22, we interpret our results in the light of social practice theory as applied to the study of transitions in urban food systems (Cohen & Illieva, 2015).

AGRICULTURE AND FOOD ISSUES IN MEDITERRANEAN CITIES

We compare six case studies[2] located in Southern Europe (Montpellier, France; Athens, Greece ; Pisa, Italy; Lisbon, Portugal) and the Maghreb (Constantine, Algeria; Meknes, Morocco). They illustrate the diversity of agricultural and food issues among Mediterranean agro-ecosystems. Our results show that the development of strategies for agriculture and food occurs much more frequently in urban regions of northern Mediterranean countries than in those on the southern coast.

The countries of the Maghreb have developed agricultural policies aimed at food security, but policies are concentrated on a national scale. These issues are seldom found among the preoccupations of urban and agricultural actors in Southern Mediterranean cities. Their urban policies remain oriented to wards the development of social housing for the poor, or urban plans for economic development. The question of preserving the most fertile agricultural lands in metropolitan regions has surfaced, but has not yet transformed into local public action.

On the other hand, new strategies are emerging in Northern Mediterranean countries: the "Piano del cibo" of Pisa (2011, regional level), the strategy for encouraging urban agriculture and green space in Lisbon (2012, municipal level), and the elaboration of an agriculture and food production policy in Montpellier (2015, city-regional level).

These strategies are the products of local urban governments and share a common interest in proposing a global effort to encourage the evolution of food production systems. In some cases, they are

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[2] Five of these case studies were studied in the ANR DAUME research project (Valette et al, 2012). The Athens case was based on the work of Anthopopoulou (2013)

specific policies dedicated to urban agriculture and food for the city. In others, they are part of transversal governance initiatives developed to support urban sustainability. But how do these policies manifest in practice? What actually changes?

INTEGRATING AGRICULTURAL PRACTICES IN URBAN STRATEGIES

By placing the focus on urban and periurban agricultural practices, our results highlight the conditions and difficulties of "policy implementation" in urban agriculture and food.

In the two cities of the Maghreb, the practice of urban agriculture remains difficult at the intra-urban level. It is confronted with exiguity and growing fragmentation of parcels, as well as problems from contamination of water used for irrigation. In periurban spaces, development speculation encroaches on vulnerable agricultural activities. Although the large modern exploitations appear more resistant to urban spread, they are not influenced by the proximity of an urban market. They concentrate on exports at the national or international scale. A ruralurban dualism remains dominant: sectoral policies pit housing and agricultural issues against one another; and recognition of the link between consummation, agricultural land, and food security has not broken the hold of protection measures. Finally, the emerging question of green space in cities has not yet incorporated the agricultural question.

In Northern Mediterranean cities, agricultural practices are slowly changing. Sectoral logistics dominate agriculture in periurban spaces such as the vineyards in Montpellier and Athens, and the cereals crops in the valleys of the Tage and the Arno. Nevertheless, the ongoing crises (economic, environmental) are changing these systems. They are diversifying and adapting to urban proximity. The urban demand for local agricultural produce is leading to new agricultural practices, often at the instigation of newly installed farmers, or children breaking with the agricultural practices of farming parents. However, these new practices are still in the minority. The system's structure and the actors who govern land and agricultural issues continue to support established agricultural practices over innovative ones.

In the heart of urban spaces, citizens are developing new agricultural practices in a diversity of forms. In Montpellier, Lisbon, and Athens, collective gardens are flourishing. An increasing number of urban dwellers are exhibiting a desire to practice gardening as a component of the quality of life. This is notably the case in Montpellier where the gardening practice is motivated more by well-being than by food production (Scheromm, 2015). However, this trend is markedly different in cities hit hard by economic crises. In Athens and Lisbon, the new urban gardening practices are directly aimed at food security for inhabitants in a precarious economic situation. They are developing in a more spontaneous fashion on parcels of vacant land in the city.

Stability, recomposition, and innovation characterize the practices and actors in urban agriculture.

THE PROCESS OF CONSTRUCTING URBAN AGRICULTURAL AND FOOD POLICY

In light of our observations, evaluating the evolution in practices would also indicate the need to observe how local policy-makers incorporate these changes and innovations. We illustrate this in our case study of Montpellier, where our research team helped the city's elected officials elaborate an agricultural and food production policy. This work exposes mechanisms available to officials, such as urban collective gardens, farmers markets, school cafeterias, and commercial urbanism, and also the mobilization of economic operators and civil society.

In conclusion, we have seen that cities can be important actors in the creation of urban agricultural initiatives and transversal governance, however, questions remain concerning their ability to mobilize the agricultural community and civil society in general, both elements crucial to the sustainability of any agricultural and food strategy.

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The transition towards sustainable diets. How can urban systems contribute to promoting more sustainable food practices?

Antonelli M., Massari S., Pratesi C.A., Ruini L., Vannuzzi E.

***Abstract* – The aim of this paper is to present a classification of the initiatives that can be carried out in urban context to promote sustainable food production and consumption practices. The study reviews a number of experiences of cities that have engaged in urban food policies over the past few years.**
***Keywords* – sustainable diets, urban food systems, Urban Food Policy Pact.**

INTRODUCTION

With over 50% of population living in urban areas and the largest wave of urban growth in history (UNFPA 2015), the issue of sustainable food con-sumption is rising up urban agendas. In urban context, food can act as a "a vehicle to integrate the economic, social and environmental dimensions of sustainability, as well as for addressing justice and health issues at different geographies and scales" (Moragues 2013).Citiescan be considered as the spaces in which food systems transition can be promoted with specific measures aimed at transforming practices through the action of both governmental and non-governmental actors. These practices are bundled one another as well as with non-food related practices including housing, community development, health, waste management etc. Small changes in practice are not sufficient to shift towards sustainable systems until the deviation becomes "the new normal", that is, more prevalent than previous practices. These issues have extensively been explored by Cohen and Ilieva (2015) through social practice theory and applied to the case of food shopping at farmers market using federal subsidies in New York City.Against this backdrop, the aim of this paper is to investigate the role that cities play in the transition towards more sustainable food systems. This aim is pursued by analyzing food-related interventions in a number of urban contexts around the world. A classification of the initiatives that can be carried out at the municipal level is presented. These initiatives can be implemented as part of an *urban food strategy*, "[…] a process consisting of how a city envisions change in its food system, and how it strives towards this change [and that places] food on the urban agenda, capitalizing on efforts made by existing actors and creating synergistic effects by linking different stakeholder groups" (Moragues et al., 2013).This process is concerted among different group of stakeholders, including local institutions, business representatives and the civil society.A first classification of the initiatives carried outby cities in the context of food strat-egies has been presented in Moragues et al. (2013).The classification presented in this study provides original insights in that it has a broader geographical scope by focusingon the 44 cities that have committed to signthe *Urban Food Policy* pact promoted by the Municipality of Milan. The Pact will be signed in October 2015 and involves 44 cities, among which only 19 are European. The classification presented in this article considers not only the initiatives proposed at the governmental level but also the initiatives of other actors, such as business and social movements.

METHODS

The analysis presented in this study is primarily based on secondary data collection. Primary data were collected to interviews carried out between April and June 2015.Secondary data were retrieved through a review of the existing scientific and grey literature (reports and websites).

RESULTS & DISCUSSION

The classification of interventions that can becarried out in urban context to promote sustainable food practices is presented in Table 1. The first group includes themeasures aimed at *guaranteeing food security in urban areas* and ensuring access to fresh, nutritious and healthy food to people, irrespective of age and social status. Most of these initiatives are implemented through partnership among governmental actors, business representatives and civil society. Four types of measures have been identified. First, the creation of networks and platforms, such as *Food Policy Councils* and/or Food boards that coordinateaction among different stakeholders and assist local, regional, or state institutions address local food system challenges. Depending on the local context, the focus of these platforms can be more on policy development or on particular projects aimed to increase the sustainability of the local food system. For example, the city of Vancouver has set a Food Policy Council and established a Urban Food strategy to build a healthy, accessible, sustainable food system for the region(Vancouver Food strategy, 2015). Secondly, this group includes the initiatives aimed at improving food logistics and thus delivering fresh food in suburbs or remote areas. For instance, as part of the Toronto Food Strategy, the Municipality has worked with the NGO Food Share to establish the *Mobile Good Food Market,* a food vending truck that travels across the city selling affordable fresh food in neighborhoods that have few quality and affordable food retail options within easy walking distance (Food Share 2015).The

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interactions between civil society and the state for advancing Toronto's food system have been explored by Kocet al. (2008). Urban agriculture activities, such as community gardening, are also included in this group. These initiatives contribute to promoting social integrationby strengthening relations among community members and contributing to the production of food. Urban agriculture initiatives generallyrequire the collaboration between civil society groups and local institutions. In Mexico City, one of the world's largest urban agglomerations, the Federal District's Secretariat for Urban Development has promoted rooftop hydroponic gardens, and the NGO Huerto Romita provides an area for community vegetable production in the city centre (FAO, 2014). Fourthly, this group includes the initiatives aimed at reducing poverty and making a more efficient use of food resources. It comprises of the creation of food banks and soup kitchens, but also the implementation of food recovery channels to distribute unsold (or un-marketable) goods for charitable organizations. The city of Belo Horizonte manages 19 programmes aimed at ensuring its citizens' access to high quality and affordable food, including a school meal programme and four public restaurants that provide low-priced meals to the general public and homeless (FAO, 2014). Another example of these initiatives is the Italian's *Last Minute Market* initiative (Last Minute Market 2015).The second group comprises measures aimed at *boosting and supporting local economy*. These initiatives usually involve the business sector, as well as governmental actors. Urban food festivals and alternative food networks are by far the most common type of initiatives promoted with this aim. Every year, the NGO Sustain organizes the *London Urban Food Award*, a contest to award local small food producers according on their commitment to sustainable production (Sustain, 2015). Alternative food networks (AFNs) are insteadthe "networks of producers, consumers, and other actors that embody alternatives to the more standardized industrial food supply" (Renting et al., 2003).Farmer's markets, community supported agriculture systems or Italian solidarity districts are examples of AFN. AFN are usually organized and supported by NGOs and civil society, in collaboration with local business representatives and local institu-tions(Moragues et al. 2013). Adopting local and "sustainable" public food procurement policy, as the city of Romehas done, is another way to build sustainable food systems and support local economy (Foodlinks 2013). The third group includes the initiatives aimed at *reducing local environmental impacts*, such asawareness-raising campaigns, environmental education activities as well as initiatives to prevent food waste. For example, many UK cities are currently supporting campaigns such as "Love Food, Hate Waste" by WRAP (Love Food Hate waste 2015) to encourage residents to reduce their wastage, and running events such as Feedback's "Feeding the 5000" (Feedback 2015) to divert tons of food waste and feed thousands of people[2]. Most of these initiatives are performed by NGOs in collaboration with local institutions. In the case of measures aimed at reducing food waste, the business sector (food producers, retailers, catering and restaurants) plays a relevant role too. Finally, the fourth category recollects all those initiatives aimed at *improving public health and promoting healthy food consumption*. This purpose can be pursued through awareness-raising campaigns, as well as the provision of nutrition education and cooking classes. Local policy makers and NGOs can implement awareness-raising campaigns on the importance of maintaining a balanced diet, and on the potential risks of exceeding in alcohol, sugar, and fats. New York City is on the frontline in this field. The Health Department has recently "*Pouring the pounds*", an ad campaign to discourage excessive consumption of sugary drink (New York City Department of Health, 2015). It also sponsors the program *Stellar's Farmers Market*, thanks to which nutritionists provide free nutrition education workshops and cooking demonstrations at select farmers' markets throughout NY. Many cities have included nutrition education programs in their food strategies. The city of Toronto offers the *Peer Nutrition Program*, a free nutrition education program for parents and caregivers of children (Toronto Peer Nutrition Programme 2015).

PURPOSE	INITIATIVE	PROMOTING SUBJECT
Guaranteeing food security & access to healthy food	Nominating Food Policy Councils and Food Boards	Public
	Improved food logistics	Public Business
	Community edible gardens & urban agriculture initiatives	Public NGOs & Social Movements
	Initiatives against poverty (soup kitchens, food stamps)	Public NGOs & Social Movements
Boosting & supporting the local economy	Local Public Procurement	Public
	Alternative food network (Farmer's Markets, CSA, Solidarity Economy Districts)	Business Public NGOs & Social Movements
	Urban festivals & initiatives	Business Public NGOs & Social Movements
Reducing environmental Impacts	Awareness campaigns	Public NGOs & Social Movements
	Environmental education	Public NGOs & Social Movements
	Food recovery & food waste prevention	Business Public NGOs & Social Movements
Improving Public Health	Awareness campaigns	Public NGOs & Social Movements
	Nutrition education & cooking classes	Public NGOs & Social Movements

Table 1. Categorisation of initiatives promoted by cities

[2] For a detailed lists of UK cities implementing food waste campaign, please refer to: Sustainable Food Cities Network (2015).

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City Food Policies – five levers of action to foster the necessary paradigm shift in our food system

Isabelle Lacourt, Maurizio Mariani[1]

***Abstract* – Many cities are re-evaluating food practices as means to improve urban planning and management. Not only food appears as a guiding thread able to connect several main competences, usually siloed, related to urban environment, economic development, education, solidarity, culture and leisure, health, or governance, but it can also give consistency to a synergic osmosis between cities and surrounding territories.**

The analysis of 12 case studies shows how innovative players have been able to detect the capacity of foodrelated projects to create social bonds and provide environmental and local economy benefits. The overview on the various strategies shows that no paths are mandatory but all may concur to a deep cultural change that could be more efficiently channelled and fostered through a series of measures related to new territorial and/or institutional tools, urban planning and last but not least, public food service.

***Keywords* – city food policies, sustainable food systems, food urban planning.**

INTRODUCTION

Food is not usually considered among the competences of cities (Pothukuchi et al., 2000). Mainly produced out of the cities, authorities consider that citizens are mostly able to exercise their free will in choosing their own food habits. Negative externalities related to environment or health are not perceived as a whole and thus are underestimated or ignored. Food is not seen as a modern factor of innovation able to foster and shape the future of urban settlements but as a trivial commodity to be provided by an efficient global supply system. Finally food issues are too often diluted between the different aspects related to health, nutrition, environment, production, public food services or local economy, all being treated separately. But decision makers are caught up by the early intuitions of pioneers and are urgently asked to put on agenda the question of city food policies, working together with people communities and associations, as well as researchers and companies, in a creative social space to design and experience new solutions bringing significant improvement to sustainable food systems (Schiff, 2013). As consumer society is under attack, healthy, clean and low processed food appears as one of the few goods to remain fully legitimated by a daily consumption, because it is a vital need for everyone. Today, a flourishing context of innovative practices related to agriculture diversification, rural tourism, and local food supply to promote food quality is echoed in the growing number of urban agriculture projects thus creating unexpected bridges to help mutual recognition and direct links between food producers and consumers, indistinctly in urban and rural communities. This phenomenom around urban/rural food issues is reminiscent with the intent to shape the city to influence food practice (production, shopping, cooking and managing waste) and thus to help transitioning the whole food system (Cohen and Ilieva, 2015).

This paper aims to investigate how pioneers (or positive deviants according to Pascale et al. 2010) could detect the potential of food-related new practices to strengthen social cohesion, on top of other benefits related to urban environment, economic development, education, solidarity, culture and leisure, health, politics and governance. The objective is to build up a composite picture that outline a comprehensive panorama of the various characteristics of urban and territorial sustainable food systems to confront it, in future steps, with propositions previously designed to enable practices' change in 3 levels of governance and institutional structures, urban communities and food public procurement (Krausz et al. 2013, Lacourt and Mariani, 2015).

MATERIALS AND METHODS

12 different cases histories have been selected in Europe and North America to provide a coherent frame of analysis. Bibliographic research as well as interviews with open questions have been made and results have been presented in short papers organized in 3 sections: a general description of the city, a list of the main steps implemented for urban transition and a focus on public food service. The 12 cases have been classified in 5 categories of levers of action, according to the main determinant found during the inquiry, even if such classification is not strict as all cases could fall into more than 1 category.

RESULTS AND DISCUSSION

Lever 1: Food Policy Councils help to develop a systemic vision. The adventure of these multi actortask forces started in Tennessee more than 30 years ago and since then, they have demonstrated all over North America their consistent capacity for bringing people together across sectors, disciplines, and even political stripes to work together on food issues (Harper et al,2009). Toronto and Bristol's cases highlight how instrumental Food Policy Councils are useful in working with communities, policymakers, developing a new food culture and creating a basis to identify opportunities, efficiently channel all existing voluntary actions and therefore allowing a more rational use of funding.

Lever 2: food connects social and health concerns. New York City case is a brilliant example of an inclusive cultural change based on the concept of Food and Nutrition Security, which has framed sustainable

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food into an essential and transversal element in the life of all citizens within a holistic approach. The budgetary restraint imposes to find solutions to fund these programs. Following the example of NYC, cities may 1- develop metrics to measure externalities in order to offset expenditures and budget's shifts, 2- support alternative food system to positively contribute to local economy and redistribute part of the expenses over the local area.

Lever 3: the leverage of public food service – useful for cities to test and exemplify any kind of action about sustainable food systems. Copenhagen has foreseen its potential role to invest more in human resources and know-how and also to educate and raise awareness on the importance of food among the population. Paris and Rome are good examples of cities aware of public procurement potential to enable them to reorganize the food supply chain, although with radically different strategies including production and distribution (inside and outside the city).

Lever 4: urban planning against urban sprawling - using urban assets to preserve agriculture and water resources in surrounding territories. The 30 year old territorial project developed in Rennes, Nuremberg and Saragossa is emblematic to show how much food issues can drive cities to develop a responsible and coherent urban planning policy that preserves functional agricultural territories connected together and also vital resources such as biodiversity and water. Cities may develop pragmatic actions to support local food producers, mainly by stimulating the demand among urban population, using a commercial approach (Nuremberg) or an educative approach (Saragossa).

Lever 5: being smart, developing a local economy based on local food productions, including urban and peri-urban agriculture and alternative food systems. The question of food policy raises the necessity to frame the area of action in order to target efficiently the right issues. Brussels has experimented the impediments produced by the strict application of theoretical definitions that were initially used to map out the proposed field of action and finally chose a more pragmatic and experimental approach, targeting innovation and employment. Territorial food marketing can also be developed to enable the promotion of local agriculture with the objective to increase food self-sufficiency (Geneva) and to earn international reputation looking to become a capital of high quality food, open to different cultures, to attract tourism for instance (Turin).

According to this study, successful innovations may create dynamics that reshape the cities and thus enable change of practice. They stand on increasing awareness of the overall negative environmental and social impacts of capillary ordinary food consumption patterns and also on the restoring of food value able to turn old fashioned-nearly-forgotten modes in ultimate and attractive new social practices. More research is still needed to investigate how to develop useful governance tools through the deeper analysis of these new social practices (Shove et al., 2012), also to give consistency to a synergic osmosis between cities and adjacent territories.

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WG23 - Conceptualising and Assessing City Region Food Systems

In the context of rapid urbanization, a major challenge for the 21st century, cities are by far the biggest markets for agriculture and food industries. However, the food and nutrition security of (poor) urban populations is still at risk as a consequence of market volatility and rapid food price increases. In this context, there is an urgent need to develop tools, methodologies and approaches to address the challenges of food and nutrition security, agriculture and natural resource management. Moreover, there is the need to enable local authorities to ensure governance of dynamic and sustainable food systems, contributing to the realization of the right to food and the promotion of sustainable and healthy diets, with strong urban-rural linkages and enabling the involvement of all key local stakeholders, with particular attention to small-scale farmers.
In recent years, the concept City region food systems (CRFS) has emerged as promising approach to improve local food system sustainability, while taking into account ecological and socio-economic aspects. This is evidenced by, among other things, the growing number of cities worldwide which have developed their own urban food strategies and policies. Additionally, new governance structures for CFRS are being put into place, such as Food policy councils which spread from Canada and the US to Europe, and multi-stakeholder policy processes initiated elsewhere.
City region food systems encompass a given geographical region that includes a more or less concentrated urban centre and its surrounding peri-urban and rural hinterland; a regional landscape across which flows of people, goods, resources, and ecosystem services are integrally managed and provide a basis for sustainable livelihoods and resilient local economies.

In this WG it is proposed to discuss conceptual approaches and assessment methods of city region food systems, with particular attention to the following issues:

- *How to identify weaknesses in existing food chains, gaps to be bridged and bottlenecks to be removed for more resilient and inclusive food systems?*
- *How to improve access to adequate food for the vulnerable and poor urban population, and enhance market access for the smallholder farmers in urban, peri-urban and rural areas?*
- *How to support local governments and multi-stakeholder bodies such as Food policy councils in taking informed decisions on food planning and prioritize investments to make the CRFS more sustainable and resilient and improve livelihoods of rural and urban dwellers?*

Convenors:
Guido Santini, Makiko Taguchi, Yota Nicolarea, FAO
Henk Renting, Marielle Dubbeling, RUAF Foundation

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Navigating the Maize to the City

Marc C. A. Wegerif[1]

***Abstract* – The rapid population growth and urbanization of the world, with all its challenges and opportunities, is almost all taking place in the developing world. Fast growing Dar es Salaam with over 4 million inhabitants is a prime example. This paper shows what a "City Region Food System" looks like in this context. It explores the patterns of provisioning that bring the key staple food of maize, largely from the rural hinterland, to eaters in Dar es Salaam. Of particular interest is how a wide range of small scale and interdependent actors get maize, grown by small farmers, to urban eaters at a city feeding scale without large vertically, or horizontally, integrated corporate structures. Small farmers are meeting the food needs of the city in ways that respond well to the circumstances of poorer urban eaters. The paper shows some of the patterns of relations that enable this. There is a lot that is working in the existing food systems that can be built on and should not be undermined.**
***Keywords* – Food, Maize, Cities, Tanzania.**

INTRODUCTION

We face climate change and other environmental pressures, population growth, failings of the dominant global food system, rapid urbanisation in the developing world with an urbanisation of poverty while poverty continues in rural areas (Lang, 2004). This all raises a crucial challenge of how to sustainably feed cities, especially those in poverty in these cities, in a way that is beneficial to food producers.

Scholars have called for a rethinking of food regions and "[a] better understanding of urban and regional food dynamics" (Wiskerke, 2011). Much of this work has focused in developing countries, but the need is the same in Dar es Salaam (DSM), the 9th fastest growing urban centre in the world, if we are to meet the challenges.

Researchers and the development community are divided between those who look at rural and agricultural development and those looking at urban issues including urban agriculture. Work on 'value chains' tends to focus on niche crops often orientated to global markets or very specific retail outlets.

Given the above, this research, focused on the key staple food of maize, has a lot to offer to our understanding of "City Region Food Systems" (CRFS) and how they can address real development challenges.

METHODOLOGY

This paper is based on qualitative research that started with eaters of food in DSM, finding out what they eat and where they obtain that food. From there the research traced the patterns of food provisioning to the producers. The research involved observation and accompaniment of different actors in the food system combined with interviews and gathering of existing, fairly limited, data on the feeding of the city. A lot of time was spent with eaters, retailers, wholesalers, processors, traders, transporters, in markets and with farmers.

RESULTS

It is 6.30pm, Mama Lina leans over two charcoal stoves in the yard surrounded by small low zinc roofed rooms that she, her husband and extended family members live in. On one stove a pot of water is waiting for sembe (maize meal) in order to cook ugali (maize porridge), the staple dish for the meal. Mama Lina's husband and son get a modest and inconsistent income from odd bits of work as dalalis (agents), finding people rooms or houses to rent.

Mama Lina waits for her husband to come home with sembe or the money to buy sembe, but after awhile she gives up and sends one of her sons to the shop. It is less than 50 m away and owned by the shopkeeper who knows her whole family. He returns a few minutes later with 1 kg of sembe obtained on interest free credit. All the sembe is immediately cooked for whomever from among the extended family and friends may pass by to eat.

Mama Lina could have sent her son to a Supermarket, but she never does. Supermarkets are more expensive than local shops for staple foods like sembe. They only sell packages of fixed quantities with more affordable prices (still higher than local shops) only if one buys larger quantities. Getting to the supermarket requires transport for the majority of eaters and they certainly don't sell on credit.

Mama Lina could, if she had time, have got sembe for a lower price from shops specialising in selling grains. Her son could even have walked to a maize mill where she takes maize when her husband or another relative brings it from the village.

Mama Lina buys food in a similar way to millions of others in DSM who, like her, live in a difficult physical environment and depend on an uncertain and low income (NBS, 2012). For her food accessibility is essential and involves: low prices; flexibility of quantities; proximity to place of residence; long opening hours of shops; and availability of credit when needed.

The sembe Mama Lina cooked is a brand called Enjo that was started by two sisters and their brother. They mill maize, package and distribute to wholesalers and direct to some local shops. They pay to mill with a machine used by eight other sembe traders, mostly women, although the machine owner is a local business man. This is one of hundreds of such mills across DSM. Enjo buy maize from several agents and traders, most of it coming from the Morogoro Region.

Sometimes, when they cannot fill a truck themselves, Enjo share a truck load of maize with other sembe traders. They hire a small truck to distribute the sembe to clients, once ground and packed.

Over 300 kms away in the village of Zombo, in Morogoro Region, Daniel in his early thirties and his wife, assisted at times by casual labourers, work 6 acres of land. Four acres were requested from and

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allocated by the village. Two acres are rented. In 2014, the rain was not good, but Daniel got 20 sacks (approx 126 Kg each) of maize. He also grew rice and sesame. He sold 12 maize sacks to a trader who came to the village from DSM. Many other farmers in the village sell in the same way, some with larger harvests, some smaller.

Further away Godfrey farms maize on 20 acres of land in Kiteto district. On the day I first met him he had travelled all night on a tractor to deliver 6.6 tons of maize to Kibaigwa market near Dodoma. Almost a ton belonged to another farmer in the same village and the rest was Godfrey's. It did not take him long to find a buyer and sell the maize.

Mama Jane sits under a tree in Kibaigwa market buying maize in amounts from 20 Kgs up to several tons. Farmers and small local traders come with sacks on bicycles, in push carts and in ox carts. On a typical day Mama Jane buys from around 150 different sellers. She arranges to pack the maize into standard sacks and most weeks sends two 30+ ton truck loads to DSM.

When Mama Jane or another trader needs transport they call an agent working around the market. He arranges trucks that are nearby and from many different companies, some big and some small, including from the growing village of Kibaigwa.

There are dozens of traders and agents working at the market. There are also food sellers, women picking maize fallen from trucks to take home for their children, casual labourers packing sacks and unloading trucks. Very important are the "cargo porters" who load the trucks. Their association of 200 members also arranges security, replaces any stock lost and covers health care and some education costs for the members and their families.

Maureen wears a red sun hat and a scarf covering her mouth and nose to keep out maize dust. She sits chatting with other traders on a bench near the gate through which maize arrives in the Kibaigwa market. One of her regular customers is Chapa Asili, a brand of sembe distributed in DSM. Unlike Enjo, Chapa Asili have their own mill used only for their sembe. They also have a 3 ton truck used for distributing to wholesalers, but it is still a family business run by a husband and wife with 11 staff. If they need maize, they call Maureen, or another trader, and she can have a truck load of maize in DSM the following day.

If Mama Lina's son had walked another 200 m he would have found a shop selling Chapa Asili sembe.

CONCLUSIONS

This paper reveals a "City Region Food System" (CRFS) comprising a wide range of small-scale actors who, through patterns of interdependent relationships, sustainably deliver food at a city feeding scale.

Better still this CRFS makes available food in a very accessible way for poorer urban eaters and creates a large number of accessible business and work opportunities from production through to retailing.

The interdependent relationships at the heart of the CRFS depend on a fit between the different actors in terms of scale, technology and mode of operation. Interventions need to take this into account.

There is competition in the maize market, but just as much there are collaborations and public spaces that enable the system to work.

Poor infrastructure, from the rural to the urban terrains, is a constraint on the CRFS as are the lack of access to capital and inputs.

The CRFS that brings maize to DSM reaches far into the rural hinterland, raising a challenge to the more locally focussed elements of both the urban agriculture and food sovereignty movements.

The clearly gendered roles need to be considered to improve the situation and opportunities for women who carry most responsibility for ensuring their families eat. Examples include men dominating transporting while women are active in trading.

Currently the space in DSM for this food system is there largely by default. Far more could be done with planning, infrastructure and regulation to create a supportive environment for it as the city grows.

Too many policy makers assume we need corporate investment with plantation agriculture linked to supermarkets to feed cities of millions. This is clearly not the case. There are CRFSs with far more equitable development outcomes that need to be built on.

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About Content and Process: A Proposition for Food Planning in the City-Region

Rob Roggema, Marketa Braine-Supkova[1]

***Abstract* – In the strive to increase local food production we see a separation of scales. On the one hand side localised urban farming projects close to the consumers are increasing in number, while on the other side big sustainability concepts are developed in which cycles should be closed at urban or regional scales. The concepts do not land at grassroots level and,vice versa, the small projects do not add up to the broader concepts. An interlinking scale of planning for flows of food must be defined, supported by a planning tool, which is process oriented. Many planning tools for city-regions already exist, but are either not used or do not perform for the benefit of the food system. This is caused by the complexity of the food system not fitting in simplified tools. Planning is organised in sectors, creating a competitive environment in which food stands in competition to other planning goals. Hence, food appears to be "just yet another item on the wishing list" for planners that are forced to weight decisions and choose between the biggest benefits for a limited space.While there is no lack of new (technocratic-sectorial) tools, there is definitely a lack of enabling approaches, dialogue oriented, and decision-making tools.**

***Keywords* – food chain, city-region, urban metabolism**

INTRODUCTION

Due to economy of scale and globalization food chains have become extremely long, complex and opaque. With the disconnection between the production, distribution, preparation and consumption of food the market has alienated itself form all its participants.The fortress walls of the spatial separation of functions are showing some cracks. These changes are manifested in an explosive increase in mobile semi-permanent places where food is prepared and consumed at the same time, while on the other hand more attention is given to the production of food in the city. However, many urban farming projects are localised at a scale of the individual project. People cherish their (collective) gardens, but exchange with others is rare. Some knowledge is exchanged (for instance in Stedennetwerk Stadslandbouw, Urban Farming, and Urban Agriculture Linkedin Groups), but exchange of resources and products is limited. On the other side, theories on circular economy, urban metabolism and cradle-to-cradle approaches is rapidly increasing. Therefore, there is no lack of collaboration, nor a lack of knowledge, but a missing planning mechanism (a planning document and/or a tool), that operates at the scale where food is produce and consumed, and cycles can be closed: the city region. In this article we would like to set a research agenda on a participative planning tool linking local producers/urban farming with theories around closing cycles.

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PROBLEM

Theory and practice seem to be wide apart. The main reason for this is a difference in scale and the lack ofspatial planning as integrating platform for both practical projects and sustainable theories. The hypothesis is therefore that if we could spatially link resources, projects, waste streams and consumers, the efficiency of the urban metabolism could be enhanced. Therefore it is necessary to define the interlinking scale. A scale, which is not too large to lose interest of individuals and local groups, but is also big enough to close cycles in a profitable way.

TOWARDS A RESEARCH AGENDA FOR A CITY REGIONAL FOOD SYSTEM

We propose to use the city-region scale as the spatial platform for sourcing resources, produce food, process and transport, sell and consume and reuse streams of waste/materials, nutrients, water and energy. At this scale a planning tool should emphasise:

1. The city region is the area defined by the radius of the existing city times two. This implies the total area of the city region is four times the area of the city. At this level the entire food chain should/could be closed.
2. The actors in the food chain must be connected at the appropriate level. Analysis of the locations (and these can change over time), the required and offered products, the resources, the producers and consumers, the waste products and waste streams of end users, consumers and
3. This integrated system of producers and consumes, including their resource flows should, compared with the existing flows,which are recruited from the entire earth, perform better.
4. The planning of this city region is best approached with a dynamic interactive design process.

ELABORATIONS OF CITY REGION SIZE

The total area of a current city is πr2. If we take the radius of this current city and extend the city region all around it with a similar radius, the area of the city region is $\pi(2r)^2$, which is four times the area of the existing city. If we project this ratio to Amsterdam, the city-region emerges, within which the majority of food production, distribution, processing and consumption should take place.The average radius from the city centre to the current urban boundary is six km. The city region is then defined by extending urban boundary with the same distance.

TYPE OF ACTORS

Within this city region many actors are active and all of them are producing, using or processing resources and products, and waste. At a systemic level the actors are all connected. Currently many of these actors recruit their resources and products from

outside the city region, local producers are isolated within and metabolism concepts theoretically use the urban scale as the platform for their deliberations. In order to connect these issues firstly the flows connections and relationships must be identified, including the resourcing, production transportation, processing and consumption of flows related to food.

In this figure the resources of clean water, renewable energy, seeds and nutrients are, ideally from within the city region, provided to the producers. They need these resources and deliver products, such as vegetables, herbs, fruit, fish, meat. The producers deliver their products, which are distributed and processed by the producers themselves or distribution-entrepreneurs. Consumers, specialised processing companies or the producers themselves take care of processing the produce in the form of processed food or meals. Finally, these products are sold to consumers or vendors, such as street vendors, markets or restaurants.

The next step in concretising this abstract connectivity scheme can be conducted when the actors including their demands and deliveries are investigated.

CITY REGION FOOD PLANNING AS A PROCESS

Understanding the chains of food production, applying the principles of metabolism and plan at the appropriate scale is important but wouldn't be successful without an inclusive planning process. The question is however, at which scale and with whom this process should take place. The actors identified beforehand (resource producers, producers of crops, distributors, processors and consumers), should be part of the planning process. The city region food system planning process becomes then a platform for all actors in their (sub-)region. This platform is a planning tool facilitating and enhancing a multi-stakeholder and cross-disciplinary planning process, and integrates uncertainty as part of a design process in a dynamic world. Such a panning processis not linear from analysis to implementation, but works cyclically and iteratively, jumping back and forth between steps. During the planning process other techniques and tools can be used, such as multi-stakeholder consultations (Keskitalo, 2004), design charrettes (Roggema, 2013), data mining from crowdsourcing (Heipke, 2010; Elwood, Goodchild, Sui, 2012), 30-30 exercise (Roggema et al., 2013), backtracking (Roggema, 2009), prototyping (Budde et al. 1992; Buchenau and Fulton, 2000), or foresight (Destatte, 2010). The common and essential element in these tools is the capacity to enable creativity.

CONCLUSION AND DISCUSSION

In this paper we have proposed a research agenda for food planning in city regions. As discussed here, three aspects should play an important role in this agenda.

1. The investigation of the size at which the flows of resources and consumption of food should ideally take place, and at which scale the planning of the food system should be undertaken.
2. The detailed investigation of the flows that establish the food planning system both in location (origin and destination) and the actors processing these flows, and including re-use of waste flows.
3. The way the planning process should be organised in order to not only involve the actors in the area, but also encourage the exchange of flows amongst the actors.

These questions, amongst others, could well be investigated taking a concrete area as pilot region, in which a strong food initiative is already available and to a large extent, the actors are known.

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Urbanization and farming in the Pearl River Delta (China): a tentative assessment of correlations

Francesca Frassoldati[1]

***Abstract* – The Pearl River Delta (PRD) is described in international literature as a global manufacturing hub where the rate of urbanization exceeds 80% (2010). Due to galloping urbanization, the reduction of farmland was accepted as the inevitable side effect of development. However, farmland is present and in some cases represents a prominent land use. General correlation between agricultural reorganization and an urbanizing region has been evidenced since the early 1990s, but practical measures of the change are rarely assessed. The paper explores such potentially conflicting relationship in the PRD between 1996 and 2010.**

***Keywords* – regional food system; urbanization; regional agriculture; Pearl River Delta China**

INTRODUCTION

In the 1970s, the tight relationship between urban life and agriculture was so structural that nearly 28% of land in the vicinity of the city was used to grow vegetables in Guangzhou (the main city in the PRD; Skinner, 1978). With an estimated population of over 5 million, "virtually all of the local vegetable production for urban supply comes from the two suburban districts within the municipality proper" (Skinner, 1978, p. 764). Food supply specialized allocating fresh vegetable cultivation in the vicinity of the urban market, and more durable produce, such as rice, further from the city. That picture illustrated the earliest transition from self-sufficiency to market demand in the PRD, which in fact anticipated China's reform period. There was no land market in the 1970s China, but profitability of local trade recreated patterns of land use that drafted differentiated land values.

Cities in the Delta expanded in the late 1990s, thanks to a process of administrative redefinition of urban and rural institutions. Urban population also jumped from 60% in 1996 to over 80% in 2010, requiring more urban amenities, infrastructures, and built-up areas. The shift of the majority of the population from rural to urban is generally accepted as the manifestation of the rural-urban transition of the PRD. As such, this is a process in which the aspects related to agriculture becomes irrelevant to most part of the population and to the system itself. Following on Satterthwaite et al. (2010), the ruralurban transition of the PRD might be regarded instead as a more nuanced process. An illustrative example is the link between regional production and consume. An urbanizing society in which people are getting wealthy changes the pattern of food consume. Parallel to urbanization, the production of vegetable, fruit, and aquatic products in the PRD reinforced; although with less margins, it still surpasses local needs (Frassoldati, 2014). The present article attempts to assess such changes.

MEASURING AGRICULTURAL PRODUCTION AND URBANIZATION

The hypothesis of a link between agricultural choices and growing urbanization has been highlighted since the early 1990s. In the Mekong Delta, van den Berg, van Wijk, and van Hoi (2003) have made some tentative definition of the problem: however, in fast transforming regions both farmland and urbanization are difficult to assess; moreover, the delta environment makes it hard to detect scattered farmland using remote sensing. As at the time of imperial ruling, 'production' and 'people' are by far more reliable entities to be surveyed (knowing that, emperors used them to apply tax levies). Although caution is always recommended with official statistics, data concerning the agricultural production of the PRD are regularly collected by the peripheral rural administrations, and than assembled at county and city level (Fanfani and Brasili, 2005). A strong reason in support of the use of these data is that the size of the study area makes it impossible to collect consistent primary data for a longitudinal study. Urban population was selected as the second element for correlation tests: an increase in urban population implies a reducing number of people working full-time in agriculture, which may affect work organization as well as production. Moreover, more urban population generally justifies an expansion of urban land use that potentially reduces available land for farming. The urban population – estimated more precisely than the urban space – provides a good test for the hypothesis of an urban market interaction with the 'rural', independently from any administrative designation or regulation.

The correlation between growing urban population and agricultural production will show if choices of particular products are confirmed when population grows; it is worth reminding that agriculture does not change in a matter of days. Fruit plantations and ponds require usually a number of seasons before they become productive, although can be easily dismantled.

CORRELATION CONSISTENCY

Considering how rapidly urban population increased in the PRD, five tests of linear regression show differentiated trends. Only rice production unequivocally decreases in parallel to urban population growth. The production of vegetable reveals a rather strong positive correlation coefficient, although scattered points evidence a precipitous reassessment in 2007 (the effect of quality regulations may be influential). Fruit production has positive and regular correlation with urban population growth, which in part

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is due to the high demand for fruit in emerging economies. Fruit plantations require more time to become productive, and mid- or long-term investments that pay back higher returns than general farming. Swine livestock and aquaculture have the more regular positive correlation with urban growth, rather uninfluenced by contextual decisions. The only discontinuity evidenced in swine is attributed to specific diseases that reduced the total number of livestock.

The correlation of urban population growth with strategies in rice, vegetables, and fruit production, fishery and swine livestock in the PRD from 1996 to 2009 is not a proven demonstration of a direct causation. It is revealed a quite likely stimulus to develop functional commercial agriculture notwithstanding the interference of regulations, particularly for items that can be produced by small or medium-size suppliers relying on local trade and distribution networks.

SOME FINAL OBSERVATIONS

The challenging consideration that derives from the correlation tests is that adjustments at the regional scale driven by expanding urbanization have guaranteed agricultural profitability. Had agriculture not adapted to become more land-, work- and profitintensive withdrawing self-sufficiency, regional farming would not have had any future. New agribusiness does not necessarily grab land from individual farmers who are – on the contrary – rather willing to lease their land and try other business or eventually go back to land tilling in different and more stable conditions. Tenants reorganize distribution and utilization of productive factors – labour, land, and capital – of traditional farming (individual households or collective institutions) towards "Scaled-up, specialized, commercialized and vertically integrated agriculture" (Zhang and Donaldson, 2008).

The prospect is theoretically challenging. On the one hand, post-industrial development theory describes urbanization in terms of increasing distance from an ideal regional self-containment. On the other hand, high rate of urbanization highlights that only specialized agriculture survive within an urbanizing region. Facing these two options, adaptation to increase the added value and maintain agriculture in the urbanized PRD is viable at the regional local scale, but will force other regions to specialize in less profitable grain production. Local adaptive responses should not forget the necessity to cope with redistribution at a larger scale.

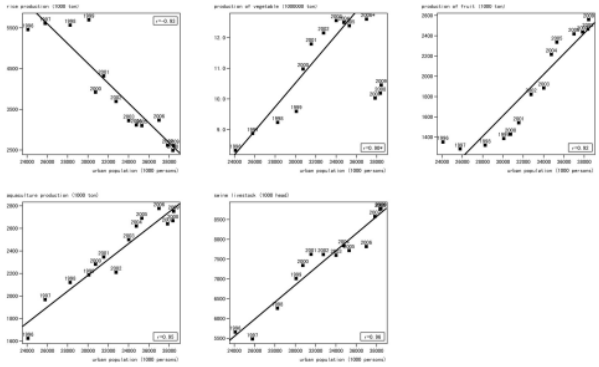

Figure 1. Five correlation tests: rice, vegetable, fruit (first row); aquaculture production and swine livestock (second row).

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Do smart drivers in the food chain improve the links between cities and the countryside?

A. Galli, E. Marcheggiani, M. Belletti[1]

***Abstract* – Rural regions in Europe are characterized by scattered settlements and urban sprawl. This has led to an entangled mix between cities and countryside. The main issue, among others, of such a spatial and functional emerging pattern is a generalized decline in both environmental conditions and well-being. In spite of the relentless blurring of the differences between urban and rural functions over time, citizens still consider the countryside as the place from which primary goods and eco-services are provided. At the same time, farmers are eager to boost their relationships with cities, which are seen as a promising growing food market. Bearing in mind as cultural and social needs also play a pivotal role in the relational game between city dwellers and farmers, we seek to shed light on the role of smart drivers who lead the future of the so called rural-urban partnership. On the one hand, the vitality of rural regions close to cities has been recently advocated by an OCSE study. In this context our work considers the peculiar typology of a rural-urban system, that of Central Italy. Focusing on specific study cases in the Marche Region, we have taken into account the relationships among Solidarity Purchasing Groups (SPG) and farmers, and the potentials of these two endeavors for sustainable and strengthened territorial economy and rural policy.**
***Keywords* – food economy, cultural landscape, ruralurban partnership.**

INTRODUCTION

The idea of cultural landscapes *as socio-ecological-systems (SESs)* was conceptualized by Matthews and Selman (2006), who explored resilience and stability as key elements of "local" development. According to them, a central dilemma of cultural landscape maintenance regards the memory of historical agricultural practices. The forces that shaped the rural landscapes during the past were part of a shared knowledge. Most of them are often obsolete today and may fail to reproduce their valued properties. Whilst local forces are important for the preservation of rural landscapes, new drivers tend to reflect more and more on the globalized economic model and its social trends.

According to the two authors, the concept of adaptive cycles may also, dynamically lead to adaptive changes of the steadiness of a SES. The ideal condition is given not only by a linear pattern of equilibrium, but rather by *attractors along with complex patterns*, generating the most suitable social and environmental balance. A scientific approach to such a complexity is not an easy task. A sound methodological purpose should focus on the inner dynamics regulating a network of SESs, taking into account both the social and economic relationships among all the actors involved. The work should aim to map and strengthen potential "virtuous cycles", to counter the threats of modern "vicious cycles", often affecting rural-urban settings.

Regardless of the *locally oriented rural development*, Born and Purcell (2006) advocated the idea of a local trap. Their conceptual baseline was laid on the tendency of food activists and researchers to assume that whatever was all on a local scale was desirable and preferred to the larger scales (ecological sustainability, social justice, democracy, better nutrition, and food security, freshness, and quality). As an example, local trap assumes that "a local-scale food system will be inherently more socially just than a national-scale or global-scale food system".

The complexity of SESs and scale traps make rural-urban areas a peculiar setting. According to the international Organization for Economic Cooperation and Development, despite the fact that there is no unique path to growth a clear convergence is shown by rural regions. Moreover, rural areas close to cities primarily drive such a trend (OECD, 2006). The key specificity of the linkage between rural and urban are: both have growth potential and often complementary assets; both regions are shown to be increasingly integrated in functional regions (self-organizing spaces); the integration of such a frictional space is important for socio-economic performance. The paradigm of this partnership can help common objectives (management and maintenance of natural assets, service provision, improved Political relevance, better access to funds, and economic development with regard to urban agriculture).

In this context, SPG experiences in central Italy suggests that local and global do not mutually exclude one another. We consider each single SPG as a specific SES. A "living entity" in close relation with the agriculture and food economy, whose effectiveness depends by its autonomy, sense-making and space perception, seen as a psychological projection.

The overarching idea laid on three key issues, supported by empirical evidences. First, each SPG has its specific space (its natural operating space within a given territory) temporal dimension (i.e. organizational routines). Second, each SPG is determined by its mission and by the structural type of farm activity (mostly, supplying food) which are crucial. Third, the food and brain economy are two sides of the same coin thus, every SPG experience has to be questioned as part of routine changes at *habit loop* level (Duhigg, 2012).

METHODS

As pointed out by Froese and Di Paolo (2011), a small but growing community of researchers reject the –dominant- computationalist paradigm, in favor of the enactive approach (Maturana and Varela, 1987). Along with these authors, our approach laid on a core of concepts (autonomy, sense-making, emergence, embodiment, and experience) to find novel social interactive solutions, suitable for research on:

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territorial scale, food system and landscape. Our main purpose is to setting a food economy experiment to interpret the local dynamics of a specific case in Central Italy (Marche Region).

The method consists of three steps. According to the SES's approach, we have firstly surveyed and mapped the regional network of SPG experiences, in order to outline the overall structure of SPGs in the region. To do so, the territorial conditions within which the SPGs operate have been described using, among others, GIS technologies considering specific characteristics (rural vs urban, landscape, etc.) Secondly, the behavior of the regional clusters of SPG/SES was used as an indicator of the typology of rural-urban relationships. In a third step, a systemic framework was set up to apprise the SPG experience from the inside, highlighting the alternative patterns of economical and territorial change.

RESULTS

We first mapped about 10 SPGs with more than 100 endeavours, using GIS technologies (QGis). We have also spatially described the area of competence of each SPG, at regional level, through a set of thematic maps. The set of maps showed the area of competence overlaid by the chart of regional landscapes. According to Fig. 1, each SPG is represented by a mash (the coloured blobs) of nodes (the single suppliers). The SPG networks in the Northern part of the region have smaller mashes (more suppliers and/or smaller territories of competence).

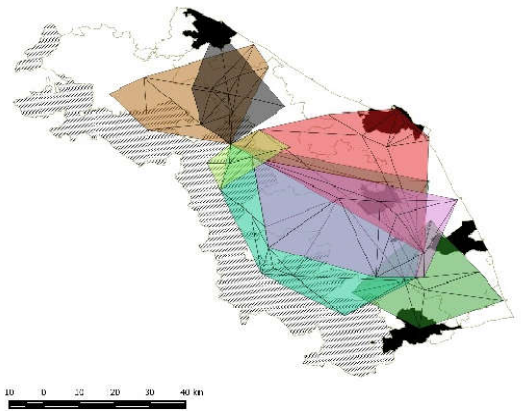

Figure 1. Specific patterns of SPGs in Marche Region, Italy.

Moreover, they seem to be better interrelated with urban and peri-urban areas on the Adriatic coast. On the other hand, Southern SPGs show larger mashes (less suppliers and/or larger territories of competence) and closer relationships with inner and upper lands. Regardless of relative position in the region, each SPG unfolds its network within the hilly landscapes elongated from the North to the South in the middle part of the region. Finally, considering the territorial interactions among SPGs, we identified four main focus areas (the SESs), where the spatial arrangement of networks could be connected with well-defined socio-economic trends. Second, we carried out a quantitative and qualitative description of the suppliers (farmers) supporting the SPG economy, specifically for each of the four SESs identified. The structural crisis of industrial agriculture emerges plainly from the smallholding households linked to the SPG networks. Third, we realised a quantitative and qualitative description of the consumers – the families constituting the SPG members. The "power of habit" comes out clearly through the SPG family member experiences, describing sustainability matter as a problem of routines and life style founded on a food regime that is incoherent and only designed to perpetrate the supremacy of financial capital.

CONCLUSIONS

We moved from the basic assumption that rural areas are lagging behind in aggregate terms, but "rural" is not synonymous with decline. While socio-economic indicators demonstrate that rural areas face some common challenges, a striking heterogeneity in the development of rural regions goes far beyond the generalised image of rural disadvantage. Globalisation, increased accessibility and new migration patterns are offering new opportunities for rural areas to develop. According to the most recent data, the region with the highest rate of growth in employment was a rural region, especially close to cities.

A shift towards an agro-ecological paradigm in which an ecologically driven conception of value, addressing social reproduction rather than capital accumulation, is emerging worldwide. In this scenario, rethinking the mode and the role of agriculture is something inexorable. We need to figure out how to progress, not regress, to a modern rural economy.

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Foodscape: informal place for sale and trade

M. Bertagnin, A. Covatta, M.S.M. Yassin[1]

***Abstract* – The paper aims to provide an analysis of the current food supply situation through the investigation of some peculiar markets and also new trials concerning food supply in contemporary metropolis. Markets selected and analyzed are taken from extremely different situations on one hand major urban agglomeration based on capitalistic system on the other rural-urban blended conditions, but all of them are related to informal spatial configurations. The connotative informality is the main trait of those realities where food becomes more than an object of consumption and it transforms urban areas, cultural identity and quality of citizen lives.**
***Keywords* – metropolis, food, market, density, formless.**

INTRODUCTION

The relation between metropolis and food is essential to our ordinary life. The different ways through which nourishment reaches our table is a fundamental issue to be investigated even more if we consider that in the next forty years, 75 per cent of the world population will live in boundless urban agglomeration. Cities growth represents also a crucial factor for rethinking food as element and tool for urban design, basically because cities consume three quarters of the planet's resources. The present paper investigates two paradigmatic case study selected as best practices for their peculiar relation between food and city. The first in-depth analysis is Tsukiji fish market of Tokyo that considers metropolis the place of density, the second is Nile basin regional food system, like in the rural area of many African countries, food is produced and traded near the place of production, generally along the closer road, an original anticipation of the new trend of food at zero kilometer. Through this investigation the paper aims to raise the following question: what is the spatial relation between food and city?

2. TSUKIJI FISH MARKET: BIGNESS VS SMALLNESS

Today Japan is the world's leading costumer of seafood and it benefits the largest fishing industry. In Japan there is one place where it is almost impossible to separate city perception, food sensuality and economic dimension; this place is called Tsukiji fish market, the largest fish market of the world.

Tsukiji literally means 'land reclamation' and it is refereed during Edo period when this area was formed out of land reclaimed from Tokyo waterfront after the *Meireki* fire (1657). The long history of *Tsukiji*, running from 1935 to 2015, underlines the strength and legacy of this spatial system rooted on cultural value opposed to Tokyo bay capitalistic development. Data obtained through analysis, observation and measurement during site visits revealed two antithetical dimensions and organization of the market both necessary for its output and operation: on one hand the bigness of macrostructure and economic income, on the other hand smallness defined by individual retailers.

Figure 1. Family retailer in Tsukiji (A.Covatta)

To begin with bigness, the market occupies an area of 250,000 sm and around 50,000 people visit it daily to buy and sell fresh, frozen, and processed seafood. Tsukiji functions simultaneously as both a warehouse and a market, offering around 2,000 varieties of fish and an annual turnover of 5.7 billion dollars. It is a sort of economic indicator of GDP and financial stability of Japan, extending its role beyond the simple realm of a traditional market.

Another important relation based on big scale is established with infrastructure. The construction of Tsukiji market is one of the first examples of the transition between the use of water and the use of rail for urban transport. In fact the railway infrastructure is still visible in the original curvilinear design of the market's main structure that allowed the passage of trains. Finally market preferred, since the '60s, the fast development of the highway system that has intensified within Tokyo area.

Despite the huge data noted above, Tsukiji market expresses itself through a human-scale design approach characterized by smallness and individual/familiar trade. The wholesale is composed by 1.677 retailers where each unit is generated around the individual space composed by a counter, a shelf used to cut fish, a number of other surfaces through which expose goods, a box with the same size of box-shower where retailer makes huge economic transactions, finally telephone and fax through which receive orders.

The small scale is the informal essence of the entire market, it enhances direct feedback between retailers and buyer increasing fish quality based on respect and cooperation between workers, moreover it gives a sense of picturesque attachment also for tourist culture visible in all the entire Tsukiji neighborhood dedicated entirely to food culture.

3. HIGHLIGHTS AND INSIGHTS FROM NILE BASIN CITY REGION FOOD SYSTEMS

The Nile Basin is an extended territory in which the agriculture is showing growing trends in urbanizing

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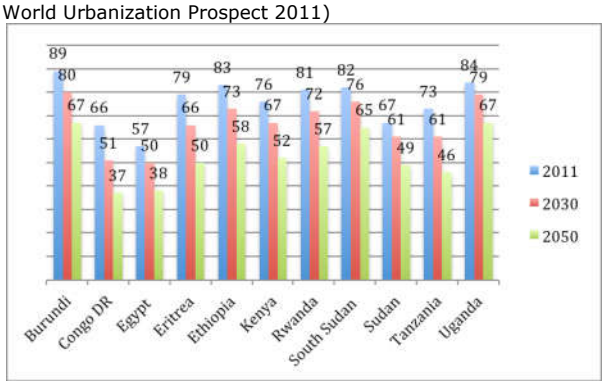
setting, the food systems are showing increasing complexities, interdependency and interconnections. From the Equatorial lakes, the Ethiopian highlands to the confluence of the white Nile and Blue Nile in Khartoum, the agricultural schemes are extending and intensifying along the shores of the Nile and determining the formation of extended city region agriculture and food systems. From Khartoum up to Cairo and the Nile Delta at the mouth of the Mediterranean Sea. The Nile Basin macro-region is witnessing significant climatic variability and above all demographic growth, almost reaching half billion inhabitant and associated fauna and flora, with increasing percentage of Nile Basin population who will be settling in urbanized settings and settlements.

Table 1. Rural Population in the Nile Basin. (Source of data: World Urbanization Prospect 2011)



The population of the Nile Basin was around 85 million at their independence era, with projection of over a billion persons within this millennium. That booming demography requi res mi t igat ion, adaptation and adoption of urban agricultural policies and planning, consideration of imperatively adequate food and nutrition systems to cope with. In that scenario, the food security and nutrition can be addressed if innovative, integrative, comprehensive systematic approaches are locally and globally elaborated, financed, monitored and followed-up. For instance, urban individual and collective gardens (vertical or horizontal) could be encouraged, trees planting are boosted, and ecological urban hubs are maintained. The lessons and necessity to paradigm shift to vertical or urbanizing agriculture, where there is soil sealing and soil degradation, to greenroofing and vertical agriculture should be deeply and seriously researched by the Nile Basin states to accompany and accommodate that vision in their regional urbanizing agriculture and agritecture. Feasible measures and implementable concerted actions where it is appropriate and economically viable, socially beneficial and environmentally sound and friendly should play a fundamental role in future food and nutrition security. The Nile Basin major rivers and tributaries constitute the fluid supporting structure for the urban living, where most of the city region flourished. We will highlight that Egyptian city triangular region food system. It is an extending and sprawling food system from the greater Cairo to Alexandria and Port Said on the delta of the Nile River along the Mediterranean Sea, from Aswan and Luxor. The structure, conduct and performance of this concentrating food system markets and places are of dynamic nature, changing locations and allocations. Analogues food system is the Lake Victoria sub-basin circular food system, with considerable demographic concentration in Uganda, Tanzania and Kenya.

Figure 2. Lake Victoria Basin.

Furthermore, the Sudanese food system along the Nile is taking similar shape when compared to that consolidated in Egypt. The small urban settlements, which were separated from each other along the shores of the river, are joining one to the adjacent and continuing on an ever-blended urban-rural food system, where it is hard to distinguish the rural urban benchmarks. In all these cases, the spatial population distribution, markets and trade are influenced by the climate, rainfall, soil fertility, mineral resources, peace and security, social and economic infrastructures such as transportation networks, education, health, telecommunications, hospitality and tourism facilities. However, the Nile Basin River system appear to be the driving factor at t rac t ing the format ion of these human settlements, and forming the interdependent and interconnected city region food system.

4. Discussion

Previous studies have underlined how food will shape cities even more in the near future, and those constructive and dynamic interrelations are possible only with the preservation of the *informal* core of market that can be assumed as key factor. Formless strategy provides another type of spatial order and connection between food and metropolis. It is Tsukiji, indeed, an example of large-scale food retailing that is able to promote a sustainable urban density, creating metropolitan revitalization processes. Along the Nile Basin, generally the market and urban horizontal expansion develops in a sort of informal pattern dictated by the growing population and rural urban exodus.

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Agriculture and food as an infrastructure: a proposal for a Rome City Region Food Strategy

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***Abstract* – The paper focus on the concept of food and agriculture as an infrastructure– which is both spatial and relational - within the context of the urban Mediterranean phenomenon, where, with all its political, cultural, economical, social and environmental differences, there is a common relationship between food, food production and cities. The aim of this paper is to explore the agricultural context of Rome, focusing on its role in the metropolitan area development process, assessing City Region Food Systems. Taking Rome as our reference, we will then try to analyse the processes and flows linked to food and then define its characteristics through the lens of city agri-food systems, that can act as a device of resilience, made up of places where flows, relationships and processes become increasingly more sustainable, and where both physical and intangible spaces act as an infrastructure in their exchange with the city.**
***Keywords* – Rome, City food Region System.**

INTRODUCTION

The relationship between food and cities - seen not as a simple fact but as a complex system of social, economical and political behavior - can tell the story of many Mediterranean cities and certainly that of Rome (Cavallo et al., 2014). This is because the agricultural and urban facets of Rome are set side by side, without interruption, defining a breadth, a space that somehow epitomizing the Roman landscape itself. While the relationship between the parts has not changed - the logic of Rome is still formed within the breadth between city and agriculture - the questions asked by the City Food Region approach call for a new structural balance within the landscape based on new instrument with the capacity of examining and implementing in parallel the city and its surroundings.

AGRICULTURE AND FOOD IN ROME

Rome is the largest city in Italy in terms of surface area and population, and was the largest agricultural municipality in Europe until 1992, when Fiumicino became a distinct municipality. The special features of Rome are also concerned with the extent and size of settlement development. Two thirds of the urbanised land has been built up over the last fifty years, mostly on agricultural land. Despite this, the last census data showed that urban farms increased by 44% and agricultural land by 16% over the last decade.The role played by the local food network in Rome is remarkable, particularly in case of farmers' market, SPG' and those linked to box schemes experiences have seen significant success. The increasing importance of Alternative and Local Food Networks is showed in the data: the 60% of Rome municipalities farms sell directly it was registered an increase of +57% Farmers' market at municipality level and of +64% in Rome Metropolitan Area in the last three years (Marino et al., 2014). The local food network behind agriculture in the city, within a number of integrated social agrarian cooperative, who represented an alternative food production system and landmark for many initiatives carried out by the civil society, associations, cooperatives, volunteer and school sectors, community supported agriculture (CSA) initiatives. The system described above configures the set of all the different forms of foodscape in Rome as a device of resilience for the city, made up of places where flows, relationships and processes become increasingly more sustainable, and where both physical and intangible spaces act as an infrastructure in their exchange with the city. At the same time the Metropolitan Area has a great unexpressed potential: if the Incidence of Agriculture (figure 1) is higher compared with the national average, the Incidence of Agrifood System (figure 2) is still quite low (most municipality data shows the marginal role played by agroindustry in Roman area) and it's the same in terms of Incidence of SFSC (figure 3). The issues linked with urban food policy call for a framework integrating a wide range of sustainable food and agriculture system elements into a community at a site, neighbourhood or city-region level, beyond the boundaries of the urban areas itself, including towns, semi-urban areas, and outlying rural lands. Cities are a part of social-ecological systems and agricultural production is an integrated urban activity that contributes to the resilience of cities. Most future urban expansion will occur in areas of low economic and human capacity, which will constrain the conservation of biodiversity and management of ecosystem services. City-region food systems are an increasingly important driver for many other urban policies.

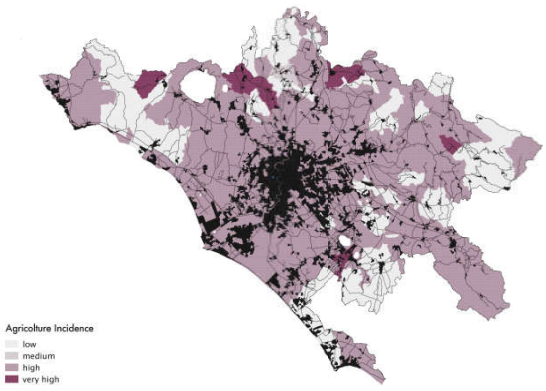

Figure 1. Incidence of Agriculture in Rome metropolitan area.

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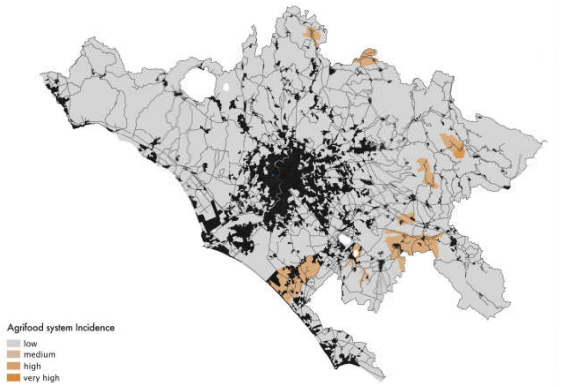

Figure 2. Incidence of Agrifood System in Rome metropolitan area.

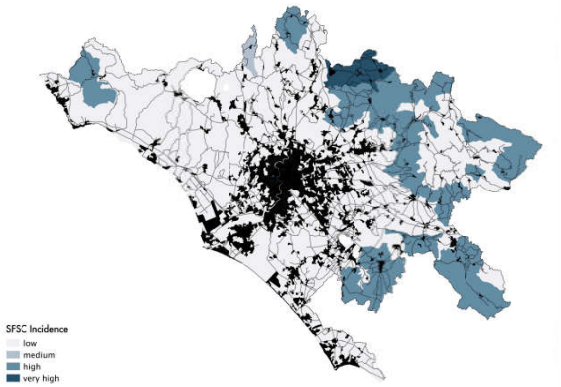

Figure 3. Incidence of Short Food Supply Chain (SFSC) in Rome metropolitan area.

THE ROLE PLAYED BY LOCAL AUTHORITIES

Since 2013 Rome municipality is engaged in different initiatives strictly linked with agriculture and food. The programme 100 Resilient Cities, financed by the Rockefeller Foundation (100RC), is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century. Within the program 100RC Rome Municipality is seeking new ways to preserve its rich cultural heritage and protect itself from a variety of environmental and socioeconomic shocks and stresses. This city is struggling to reverse decades of poorly regulated development and address its informal housing neighbourhoods, inadequate infrastructure provision, and sprawl. Rome's city limits include large expanses of still viable rural land and natural reserves, and its forward looking planners are focused on transforming these assets in order to maintain and protect its environment and build long-term resilience to shocks and stresses.

Regarding the public food service Rome represents a model at international level in school canteen (Morgan and Sonnino, 2008). One of the most important project deserving to be presented is known as the Quality Revolution, concerned with school canteen service in Rome. In the last decade the concept of quality has been widely used to describe the dynamics that have been shaping the system of food and agriculture. Moreover, nowadays organic food represents the 69% of all food served in schools, except meat, fish and cold cuts. Rome's approach enhanced the market in terms of sustainability and quality and companies are now aware that they face a public administration, which requires strict compliance in order to continuously improve their own performance. Nowadays, the Rome City Council has promoted and monitored a new initiative involving an agricultural cooperative in a primary school "Uruguay", where twice a month the school meals come from a farm based near the school itself.

The Rome City Council is enhancing actions to promote integrated management of rural areas within the Charter of the Short Food Chain of Rome,defining tools aimed the promotion of food quality, protection of biodiversity and landscape of Roman countryside. Furthermore, within the Rome local authorities' commitment on SFSC there is a Regulation on farmers market.

Even at the level of municipalities the Rome City Council is particularly active. For instance in the local markets of the XIV municipality was activated the "DOM", a brand that distinguishes the products od SFSC from about 30 local farms. Or the initiative promoted by the XIV Municipality within the Agricultural Park of "Casal del Marmo", in Project Turas funded by the FP7 program.

SOME FINAL REMARKS

In Italy, recent regulatory developments have called into question the structure of metropolitan areas (Law n.1212). Metropolitan cities are seen as vast urban bodies extending over large areas, partially inspired by the European administrative models of London, Amsterdam and Barcelona. Metropolitan cities take responsibility for the fundamental functions of planning in the territory, the organisation of coordinated public services, mobility and traffic management, economic and social development. These changes present new challenges and opportunities linked to planning a City Food region System within the governance of the metropolitan area in the issues linked.

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MadridAgroecologico, Food movement shaping a new political arena

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***Abstract* – Regional and local governments in Madrid have for a long time given little attention to urban food system. Therefore, during the last fifteen years, the generation of alternatives linked to food sovereignty has emanated from grass-root movements. Time has come to take a qualitative step forward and to generate a political impact. The lack of legitimacy of traditional political institutions, the social mobilization induced by the crisis together with the fact that food has come to the fore in the agenda of social movements and the existence of successful innovative projects promoting agroecology and food sovereignty should ease the path for the process. During six months over 150 participants from quite different backgrounds have worked together to elaborate a diagnosis and a document with proposals. The foundations have been laid to scale up ongoing initiatives of local food networks that link producers and consumers and to move one step forward. So far, these linkages usually take the form of cooperatives of consumers or similar and the standard consumer remains out of their reach. To get to the general public, structural changes in the food system are needed and the local government should play a role.**

***Keywords* – Local food networks, Local food system, Political agenda, Grass-root food movements, Madrid bio-region, Participatory design.**

PEOPLE IN ACTION, INNOVATION OUT OF NECESSITY

What happens when governments fail in their roles as enablers of sustainable food systems? In Madrid, the firm political will necessary for the promotion of Sustainable food systems has been completely absent from the Regional Government of Madrid and from most of the municipalities in its metropolitan area. Therefore, during the last fifteen years, the generation of alternatives linked to food sovereignty has emanated from grass-root movements.

New forms of urban farming emerge in a context of severe economic crisis, derived from the need to create alternatives to the dominant economic system (sometimes they may evoke experiences of Urban Agriculture in the global South). In Madrid region nowadays the number of this new farmers usually starting in an informal way, is larger than those registered officially at the agrarian census.

For a long time, these new farmers, gardeners and committed consumers had very low expectations of having an impact in public policies. A new political landscape is on its way, popular candidatures that have emerge, gained considerable power in last municipal elections (may 2015) and they are –in principle- more favourable to integrate demands from social movements. Time has come to take a qualitative step forward and to generate a political impact.

In January 2015 a consistent number of farmers, consumers, cooperatives, trainers, researchers and ecologists started a process in which the collaborative planning strategies and the management tools developed by these social movements has been applied to:

a) influence the political agenda
b) improve the activity of social movements, costumers, producers, educators in the agroecological transition and in the progress towards food sovereignty

The process is called Madridagroecologico, a bottom up and participative process trying to foster agroecology and sustainable food systems in the urban region. It entails the "application of ecological concepts and principles to the design and management of sustainable agroecosystems" (Altieri 1999). Agroecology reaches the whole system, not only the farm: issues like social justice and equity, who has access to resources and who makes decisions are essential in the process.

Four workshops have been conducted, with over 150 participants from quite different backgrounds to elaborate a diagnosis and a document with proposals. The foundations have been laid to scale up ongoing initiatives of local food networks that link producers and consumers.

RULES, SPACE, ATTITUDES AND CONNECTIONS

The participatory process has served to identifying the main problems and challenges of (for the time being, alternative) networks of producers and consumers to enter the mainstream of the food system.

The workshops were organized around two main axis: a) increasing the potential for agoecological production in the bioregion of Madrid and b) improving accessibility to food.

The main problems and potentials were discussed and resulted in a set of proposals at two levels, the local governments and the regional ones:

Governance. Agroecology needs more room in local and regional governments. Rules should be adapted to the specificity of small farmers.Madridagroecologico claims for the creation of a specific department in the regional governing structure and for the promotion of Sustainable food plans at local level. In the medium-term, in order to achieve a resilient system, a Local/Regional Council of Food is envisioned.

Space in the city. Urban agriculture should be integrated in urban planning with spaces for growing vegetables or fruit but also, with facilities for selling (short-supply chain).

Space in the periurban areas. Access to land is a key issue in a metropolitan area, where land prices make it inaccessible for new farmers. The quest goes also for public facilities or access to under-utilised

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infrastructures and resources for processing and logistics.

Training and education. Capacity building on biological agriculture and on management of a farm is a key issue, and is completely disregarded in Madrid Region. An itinerary for training has been suggested, with progressive steps from integrated production to agroecology, and which goes further the learning process to accompany also the launch of a small agrarian business.

The equation for building a new agroecological city-region system will not be completed unless the public is resolutely addressed. Madridagroecologico has identified the neighbourhood as a key entity, where Local agents should act as dynamising actors to sensitize the population.

Closing material cycles, with a system in which local farmers get involved in composting organic waste was one of the proposals that received more support.

WHAT MADE THE PROCESS POSSIBLE

Some of the factors that enabled this process possible must be highlighted:

- Lack of legitimacy of traditional political institutions. The growing interest of the citizenship for the re-establishment of sovereignty resulted into participation in the construction of political alternatives.
- Under the umbrella of the 15M movements, new formulas emerged (economy demonetisation, solidarity networks...). Crisis also brought a vivid social reactivation, while food was set in the agenda of social movements.
- Since 2000 there have been a bundle of innovative successful projects of new farmers and consumers committed to agroecology and food sovereignty. They were and still are a reference with a high symbolic impact, albeit their very small dimension.
- The severe economic downturn resulted in high unemployment rates, especially for the young (youth unemployment rate lies for years above 50%). Urban unemployed engaged in agriculture in peri-urban areas through direct circuit with high trust distribution systems and Participatory Guarantee Systems.
- Changes in the food system are not coming from conventional or professional farmers, but from emerging alliances between a new generation of small informal gardeners and farmers and groups of urban consumers.

URBAN AGROECOLOGY IN PRACTICE. CHALLENGES

There is a sound basis for progress. The process, which started quite spontaneously, has triggered the creation of an Assembly which was constituted in July 2015. The assembly is well aware that rhythms and sensitivities are diverse and it will not always be easy to move forward together. But action is needed and has already started:

- Design of pilot projects in relation to the composting of organic waste with the participation of volunteers, community gardens and local farmers. The project is being explained at local governments to put it into practice.
- Program of trainning on agroecology to improve the knowledge of the participants.
- Awareness-raising, and social mobilization campaigns, addressing a wider audience, to build social support for a transition towards agroecology in Madrid region.
- Coordination of farmers and of consumers, improving their performance. In the case of farmers, the aim is to propel the constituency of an association of farmers that becomes a strong partner to negotiate at an institutional level.

ACKNOWLEDGEMENTS

We would like to thank Madridagroecologico, all the participants that made the process possible, and specially the people at the core group (Ana, Andrea, Andres, Carmen, Elena, Francesco, Jon, José Daniel, Julia, Luis, MariCarmen, los Pablos...) with whom it has been a pleasure to work together

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WG24 - Revaluing institutional food procurement

A survey in the literature and praxis of public food procurement discloses two main narratives. The first, one can say, it is of 'instrumentalist character' in which the power of the public plate relies on the states' economic, institutional and regulatory authority to convincing people to follow trends. Within this account, procurement policies should attempt to 'rectify' the contradictions of industrialized food systems. A major task in this articulation is to explain the role and identity of states and cities in supporting and creating procurement policies towards the 'common good', generally attached to sustainability concerns. While the state represents a main pillar of the instrumentalist procurement narrative, the second component, we can call it the reformist agenda, also includes other organizations like well founded NGO's and United Nations Institutions. It is based more fundamentally on the idea that 'responsible institutional' food procurement inspires two waves of reform. In one hand, it promotes the creation of bounded markets for smallholder farmers (most of the times coupled with localization and rural development narratives) while strengthening access to adequate food (often associated with nutritional, cultural and right based discourses of consumption). On the other hand, it enables complex patterns of (inter) action and organization linking food system actors at multiple levels and scales, which in turn, enables food democracy to emerge in policy processes, governance structures, procurement and supplying practices.
In addition to these main narratives, the same survey also discloses that responsible institutional food procurement has increased amid municipalities, public schools and restaurants. At the forefront of this endeavor are large cities that represent both opportunities for scaling up and bottlenecks for smallholder farmers to supply food. But, urban settings are releasing the 'city food imagination' that is often expressed in food strategies, creative tendering processes and supportive policies. And farmers are re-discovering the value of producers' cooperatives, short circuits and other forms of cooperation in processing and delivering activities.
In short, there are a variety of mechanisms and devices for public and institutional intervention. They can offer valuable insights on how to build up public food purchases and more sustainable, just and efficient food strategies. Consequently, we would like to hear experiences in responsible procurement practices by cities, different regions of the world and farmers, as well as small and large urban centers, comprising low-, medium or high levels of income. We also look forward submission of abstracts from NGOs and Multilateral organizations.

In particular, this working group will give priority to contributions addressing the following themes:

- *At theoretical level we welcome analysis on: how institutional food procurement is driven by different geo-histories, goals, structures and processes; anatomy of public food procurement agenda setting and the politics of scaling up; governance structures and processes designed to enabling change, coordination, learning and adaptation; how diverse and contested practices of procuring, supplying and consuming might lead to new perspectives – or political action – on sustainable, just, and secure food systems, participation and food democracy.*
- *From a food a more practical perspective we encourage papers discussing: the role, enablers and barriers of responsible institutional food procurement on integrating smallholder producers, women and youth into institutional markets; the contest and struggles between and among actors and public agents for elaborating rules, budgets, nutritional guidelines, quality standards and experimenting at local level; spin-off impacts on local food markets, rural development and the livelihood of smallholder producers; the processes of embedding culture in public tendering; the re-emergency of farmers cooperatives and collective devices.*

Convenors:
Camilo Lozano Torres – Wageningen-UR, The Netherlands and Universidade Federal do Rio Grande do Sul, Brasil
Luana Swensson – International Consultant FAO
Sergio Schneider – Universidade Federal do Rio Grande do Sul, Brasil

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Institutional Procurement of Food from Smallholder Farmers: Legal issues and Lessons learnt from the Brazilian and P4P's experiences

L.F. Joppert Swensson[1]

***Abstract* – Despite its great potential, the develop-ment and implementation of an efficient Institutional Procurement Programme (IPP) is not a simple or straightforward task. It requires a series of conditions that must be coordinated and matched together, including an appropriate legal framework. Within this context the paper aims to analyse three main legal issues linked to IPPs: (i) regulation of public pro-curement; (ii) development of a legal definition of smallholder or family farming producers at national level; and (iii) legal structure and regulation of small-holder producer organizations. It will do it presenting lessons learnt from the Brazilian and WFP Purchase for Progress (P4P) experiences.**

***Keywords* – Institutional procurement, legal frame-work, smallholder producers**

INTRODUCTION

In the last few years, – and especially after the 2008 global food price crisis – the use of govern-ment and as well as of other institutions regular demand for food has been seen as an potential instrument to support smallholder's production and their integration into formal market and as well as a driver of development.

The theory behind it is that connecting large, predictable sources of demand for agricultural prod-ucts (structured demand) to smallholder producers can reduce risk and encourage improved quality, leading to improved systems, increased income and reduced poverty. (Mitchell, 2011). Within this con-text Institutional food Procurement Programmes (IPPs) are considered to have considerable potential to create, stimulate and support transformative development of the food supply systems.

Despite its great potential, the development and implementation of an efficient IPP, which aims to link smallholder producers to institutional markets promoting development in the food supply systems, is not a simple or straightforward task. It requires a series of conditions that must be coordinated and matched together. Those conditions depend – but go far beyond – the governmental will and availability of demand; they are linked to policy and institutions, and additional factors on the demand and supply sides.

The successful development and implementation of IPPs must also be supported and accompanied by an appropriate legal framework. The legal framework relevant for IPPs encompasses not only the single law that creates the IPP, but also other laws and rules which may directly or indirectly impact the development and implementation of IPPs. Without the development and/or adaptation of different laws which not only allow but also facilitate the integration of smallholders into institutional markets, it is very likely that an IPP would not succeed in its objectives of supporting smallholder production and access to markets and, in particular, of acting as a driver of development.

This paper aims to analyse three main legal issues linked to IPPs: (i) regulation of public procurement; (ii) development of a legal definition of smallholder or family farming producers at national level; and (iii) legal structure and regulation of smallholder producer organizations.

It aims do it through the analysis of two key IPP experiences: (i) Brazil and its two IPPs - PAA and PNAE – and (ii) the WFP Purchase for Progress (P4P) initiative.

LEGAL ISSUES LINKED TO IPP

Regulation of public procurement

The main issue of the regulation of public procurement for IPP is that most often public procure-ment legislations impose a procurement process (the bidding process) which, due to its complexity and high level of requirements, may hinder the participation in institutional markets of a section of population – the smallholder producers – which cannot easily compete with larger producers and traders at these same conditions.

As it could be observed from both IPP experiences, the traditional procurement procedure imposed by public procurement legislation is unsuitable for the characteristics and capacities of smallholder supply and therefore may hinder the development of specific policies and initiatives which have as its aims to support smallholder farmers' access to markets. This stands especially when a complex bidding procedure is combined with a centralized procure-ment system. (FAO, 2013)

As such, for the implementation of an institutional procurement programme which has as it aims exact-ly to facilitate the access of smallholder farmers to institutional markets, it is necessary and advisable, as a first step, to adapt the legal framework – and in particular the legislation on public procurement – to those policy objectives. It is also necessary to provide for those specific cases a procurement procedure more adapted to the capacities and characteristics of smallholder supply. This procurement procedure may take different forms and use different types of contractual modalities (such as direct contracts, soft tenders, forward contracts etc.) and there is no single model to be adopted. It must, nevertheless (i) take into consideration the capacities and characteristic of smallholder supply (and in this sense be "smallholder friendly") while (ii) still maintaining the core principles that protect the interests of the institutional buyer.

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Development of a legal definition of smallholder or family farming producers at national level

Although specific definition can be created ad hoc for IPPs and within its own regulation, a legal definition that provides a unified concept of small or family farm producers to be adopted at national level by all public policies is important for the proper development and implementation of IPPs.

As already assessed by FAO (2013) unified legal definition contributes to the strength of the institutionalization of family farming in the country and, in particular, to the development and articulation of different policies and programmes on regard.

A legal definition that provides clear criteria also guarantees that the public programmes on family farming effectively reaches their recipient (MERCOSUR Resolution n. 25/07 GMC). This is particular relevant in a context (such as in Latin American one) where different models of agricultural production coexist. Clear and unified criteria also facilitate the operationalization of IPPs and help to avoid abuses or deviation of the programmes aims within the selection of suppliers.

The Brazilian experience is a valuable example of the implementation of a legal and unified national concept and its impacts on IPPs. In 2006 this country adopted through the law n. 11.326/2006 unified criteria for the definition of family farming producers to be used by its national public policies.

The unified legal concept combined with the DAP (PRONAF eligibility declaration) facilitates the implementation of IPPs and in particular its interaction with the other policies and programmes related to family farming, establishing to all of them the same group of beneficiaries. It also contributes for the formalization of family farms in the country.

The Brazilian experience demonstrates the advantages of adopting a legal definition of small or family farming producers also for other countries interested in the implementation of similar programmes. The parameters used, however, may vary and be adjusted to the national context and its specificities.

Legal structure and regulation of smallholder producer organizations

Farmer's organization (FOs) is the main model adopted and supported by both Brazilian and P4P experiences for linking smallholder producers to institutional markets. The importance of this model is not only because of the economy of scale that it brings, but also due to its capacity of helping producers to upgrade, access other markets and achieve high outcomes. (Markelova et al., 2009)

Nevertheless, despite its importance, market access through FOs, also poses several challenges, which include the legal structure adopted to regulate its organizational structure.

An inadequate regulation of the legal structure of producers organizations may pose significant problems. It may limit its utility and restrict its function. It can also hinder the organization performance and become and obstacles for it long-term development. (González et al., 2002)

This can be observed in the IPP context and especially in the Brazilian experience. In this country (similarly to many others) the complex structure and the regulation of cooperatives are inadequate for the smallest producers. On the other hand, the legal form of the non-profit association, although being the most chosen alternative, cannot be considered as the most appropriate instrument. It is most often incapable of being adapted to all functions and activities that FOs are expected to perform within its aim of market acces.

It is important and advisable the development of a proper legal model to regulate the organizational structure of FO for the proper implementation of IPPs. This can be done by improving and updating the legislation of traditional legal forms (such as cooperatives), but also by developing new models, based on organizational or also contractual arrangements, less bureaucratic and more adapted to the requirements of smallholder producers.

CONCLUSIONS

The analysis of the different IPP experiences shows that the legal enabling environment has a significant impact on the proper implementation of IPPs. The regulation of public procurement; the development of a legal definition of smallholder or family farming producers at national level and the legal structure and regulation of producer organizations are key legal issues and must be addressed through the adaptation and/or development of proper legislation.

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The connection between family farming and school feeding in a major Brazilian city

Armando Fornazier, Walter Belik[1]

***Abstract* – In Brazil, development of family farming is an specific public policy objective. Regarding commercialization, government procurement have been conducted, since 2003, to enable donations and formation of strategic stocks. In 2009, the National School Feeding Programme (PNAE - Programa Nacional de Alimentação Escolar) rendered it possible to expand acquisitions. The purpose of this paper is to assess how has the mayoralty of São Paulo fared in buying from family farmers to supply local schools. Methodology comprises bibliography and document revision as well as consultation with public officers charged with the conduction of the PNAE. Results show that, due to legal controversies, years had elapsed before the municipality began procuring; however, significant advancements were made in recent years even though the mandatory minimum acquisition requirement has not yet been attained. The mayoralty, currently, purchases directly from farming organizations, including those originating from land reform programs and family farmers from state of São Paulo. It constitutes a window of opportunity to steadfastly bond the links of product chains and to insert marginalized farmers in the food market. Nonetheless, challenges remain and the municipality has sought to communicate better with organizations in order to overcome them.**

***Keywords* – institutional markets, school feeding, family farming.**

INTRODUCTION

Brazilian agriculture is worldly renowned for great raw materials and food production which supply both domestic and international markets. With respect to the domestic market, family farming plays a relevant role so that its development and has an specific public policy (BRASIL, 2006). The approval of the National Programme for Strengthening Family Farming (PRONAF - *Programa Nacional de Fortalecimento da Agricultura Familiar*) in 1996, which not only recognized family farming as an specific activity, but also conceded differentiated financing terms to production, commercialization and investment (BRASIL, 1996), was a great advancement.

Apart from specific credit terms, other measures were implemented having as aim family farming, such as the creation of institutional markets. In 2003, the Food Procurement Program (PAA - *Programa de Aquisição de Alimentos*) was set up with a view to acquiring food to donate to social organizations and to establish strategic stocks (BRASIL, 2003). Actions aiming at supplying institutional markets with food were expanded in 2009 when it was provided by law that a minimum of 30% of the federal grant for school feeding (PNAE) to states and municipalities should be spent in the acquisition of family farmed production (BRASIL, 2009). In Brazil, meals served at public schools are gratuitous. States and municipalities, responsible for the implementation of the PNAE, receive grants from the National Education Development Fund (FNDE), managed by the Education Ministry (MEC). In 2014, the PNAE tended to 42.2 million students with a 3.69 billion *reais* budget (FNDE, 2015). Had the provision, in the terms of federal law 11,947, that 30% of the total food procured be purchased from family farmers been put effectively into force, acquisitions would have amounted to 1.1 billion *reais*.

The purpose of this paper is to assess the evolution of the public procurement program aimed at connecting family farming and school feeding in the municipality of São Paulo. The fact that it is the most populous municipality with, therefore, a great demand for school meals warrants the case study choice. Methodology comprises bibliographic revision on institutional markets and document research on the relevant programs, mainly, by means of analysis of public calls issued and contracts firmed as well as consultations, by electronic correspondence, with public officers charged with the conduction of the municipal program.

THE PNAE IN THE MUNICIPALITY OF SÃO PAULO, BRAZIL

São Paulo is the most populous Brazilian municipality with its 12 million inhabitants as of 2014. In the approximately 3,200 early childhood, primary, secondary and further education establishments engaged by or administered by its mayoralty, nine hundred thousand students are enrolled, to whom 1.8 million meals are served daily. Due to the exten-sion of its territory (1,523 square kilometres) and the traffic predicament, the logistical difficulties arising from the task of supplying schools with fresh staples are several.

According to data concerning public procurement and contracting (SÃO PAULO, 2015), the municipality purchases a considerable part of the total food destined to school feeding from familiar farmers, but has failed in complying with the legal minimum of 30%. Information provided by the School Feeding Department (DAE - *Departamento de Alimentação Escolar*) of the Mayoralty of São Paulo shows that the municipality started buying from these sources in 2012 due to legal controversies about the inter-pretation of the relevant legislation.

The local legislative body responsible to monitor the municipality's budget recommended that the acquisitions were made in the terms defined in the federal law 8,666/1993 which establishes norms concerning public tendering and contracting. On the other hand, the PNAE provides that purchases be made according to law 11,947/2009, which instituted a specific public call mechanism.

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Whereas, in the latter, the price at which the product are to be bought is established on the basis of local markets, standard procedure, in the terms of the former, consists in buying from the lowest bidder, hence the difficulty of engaging familiar agriculturists when submitted to competition from large companies.

Implementing the public call mechanism, the DAE began, in 2012, the purchases from family farming by buying parboiled rice from a commerce and land reform cooperative located in Paraná state. The contract provided that the merchandize be delivered in a centralized manner. This purchase represented less than 1% of the grant received from the FNDE.

In 2013, the mayoralty succeeded in expanding the list of products acquired from familiar agriculture. In addition to continue buying rice from the same cooperative, it also acquired organic rice from workers settled by land reform programs in Rio Grande do Sul as well as frozen pasteurized whole orange juice from a cooperative located in the municipality of Itápolis, São Paulo. The delivery was once more arranged in a centralized fashion. In the case of organic rice, an additional of 25.85% was paid comparatively to standard rice, which was in accordance with the PAA and the PNAE, which permit that an additional of, at the most, 30% be paid for organic products. The value of these contracts corresponded to 7% of the grant received from the FNDE.

As of 2013, family farmed fruits, greens and vegetables had not been purchased. In order to tackle this issue, the DAE, in tandem with the Ministery for Agrarian Development (MDA - *Ministério do Desenvolvimento Agrário*), hosted an event to which farmers' organizations from the state of São Paulo were invited to discuss the possibility of supplying the municipality's PNAE.

Owing to all learning and effort, the mayoralty succeeded, in 2014, in expanding its purchases from organizations settled outside the state and, more importantly, from local organizations, which began to participate more eminently in supplying the municipality's school feeding program. Table 1 lists the location of organizations (state) that sold food to São Paulo's PNAE and product transacted.

Federal grant to the mayoralty amounted, in 2014, to 105 million reais, of which total acquisition of family farmed foodstuffs correspond to 15%. The effort was, to that time, insufficient to attain the minimum percentage of 30% provided by law.

Table 1: Purchases of family farms for school feeding in São Paulo, Brazil, 2014

Location - State	Products
São Paulo	Banana "Nanica" and "Prata", Common bean, Frozen Orange Juice Concentrate
Rio Grande do Sul	Integral Grape Juice, Rice

Source: Elaborated by the authors based on contracts.

The public calls issued by the DAE in 2015 suggest that the list of products will expand further. Cassava flour, citric fruits (orange, lemon, and tangerine), yogurt, soy oil and pork, for instance, were added. In the specific case of pork, the contract was firmed with a cooperative established in the state of Rio Grande do Sul. Another measure adopted was to pass the municipal law which provides that, within the Municipal Education System of São Paulo, the inclusion of organic or agro ecologically based food in school feeding be mandatory, rendering it possible to expand purchases of these sorts of products originating from family farmers.

FINAL REMARKS

In the municipality of São Paulo, the percentage of total food procured for school meals attended by familiar agriculture have grown, but some adjustments have yet to be done in local programs with a view to both complying with the legal obligation and involving local farmers. The mayoralty have also tried to maintain a closer relationship with both farmers and their organizations in addition to promoting organic farming with a view to contributing to a more sustainable agriculture.

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Linking School Feeding and Smallholder Farmers: the Case of Bonito, Mato Grosso do Sul State, Brazil

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***Abstract* - The process of acquiring food for school feeding has seen great progress recently in Brazil. Currently, food purchases are made by states and municipalities. Decentralization of food purchases for school meals is stipulated by the National School Feeding Programme. States and municipalities directly transfer money for buying food based on the school census conducted in the year prior to the service. The specific legislation requires that at least 30% of the funds transferred to states and municipalities be used to purchase food directly from smallholder farmers, with the aim to strengthen and develop local markets. Public policies directed toward rural areas aim to strengthen smallholder farms in the country. Based on this, the objective of this study was to characterize the procurement procedures of school feeding in Bonito, Mato Grosso do Sul, Brazil. To support the proposals in this study, qualitative research was conducted, including bibliographic and field studies based around interviews with those responsible for purchasing food for public schools in the municipality.**
***Keywords* – Smallholder farmers;school feeding; PNAE**

INTRODUCTION

The National School Feeding Programme (PNAE in Portuguese) incorporates elements related to production, access to and consumption of food in order to simultaneously provide healthy food to students in public schools in Brazil and encourage family farmers. In this context, Law N. 11.947/2009 requires that 30% of funds granted by the National Fund for Education Development (FNDE in Portuguese) under the PNAE should be used for the purchase of food directly from family farms or their organizations, giving priority to agrarian reform settlements, indigenous communities and other communities (BRAZIL, Law nº 11.947, 2009).

The connection between family farming and school feeding is based on guidelines established by the PNAE, with the goals toprovide healthy foodto students; respectculture, traditions and healthy eating habits; and promote sustainable development. To achieve these goals,incentives are provided for the purchase of food fromlocal sources and family farms for use in school meals.

The aim of this study was to describe the process of food procurement for school meals in public schools in Bonito, Mato Grosso do Sul State, Brazil. In addition, it sought to identify the main challenges in that process. Initially,in-depth interviews were carried out with those responsible forprocuring food for public school mealsin the city ofBonito.

THE IMPORTANCE OF THE PNAE TO THE DEVELOPMENT OF FAMILY FARMING

Students have a right to be fed at school. Turpin (2009) argues that in addition to feeding public school students across the country, school meal programs have the potential to encourage small, local- and family-based productions. In this sense, the PNAE has contributed to providing healthy food for students as well as stimulating family farming nationwide.

Saraiva et al. (2013) emphasize the importance of such programs in generating income, increasing the variety of low-cost, high-quality foods, and strengthening the connection between countryside and city.

MATERIAL AND METHODS

To gather data, a qualitative survey was conducted. This approach is used to better understand why an individual does a particular thing. In Michel (2009) view, this type of research is based on correlation of interpersonal data.It does not use numbers or statistics, but rather empirical experimentation and detailed analysis.

This research was exploratory and descriptive. As for the procedures, the research is characterized as bibliographical and field based. In-depth interviews were conducted with people responsible for purchasing food for school meals at public schools in the municipality. Three people were interviewed: a nutritionist responsible for preparing the menus and food purchases for public schools in the city (municipal schools),and two state employees responsible for the purchase of food for school meals (state schools).

The information used was drawn from publica-tions by the PNAE and the Ministry of Agrarian Development, and data from the Brazilian Institute of Geography and Statistics and the FNDE. The interviews were subjected tocontent analysis. Bardin (1977) explains that content analysis is characterized by a set of methodological tools that are applied to speech.

RESULTS

The three respondents reported that funds for the purchase of food for school meals come from the federal government, specifically the PNAE. Of the total received, 30% is earmarked for buying food from family farms. However, the respondents reported that this goal has not been reached by the municipality.

The respondents agreed that achieving this goal is difficult, as it turns out that the food supply is insufficient to meet demands and the product range is

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limited. In addition, one of the interviewees revealed that another barrier is the students resistance toward certain products, especially vegetables.

When asked about the existence of a map of products produced in the city, the answers differed. According to one of the state officials, there is a record of the food produced to assist with purchases. As for the others, they stated that knowledge of products is developed through contact with the producers.

The nutritionist in charge of the municipal schools reported that they keep an updated list of what is produced in the municipality:

"[...] this year, for example, I included three products: broccoli, cauliflower, and beets. The only issue is that I run the risk of not getting the produce, because of the nature of weather [...] I send the order and the map for the following year in October, so [the producers] have time. They have complete autonomy to come to me to see if it is possible [...]" (NUTRITIONIST).

In general, it appears that the main foods purchased from family farmers are lettuce, cabbage, parsley, bananas, cassava, honey, and brown sugar. One of the state officials explained why few products are purchased:

"[...] Other products such as fruit pulp have been bought, but we do not buy them anymore because of problems with the packaging, as well as [problems with] other manufac-tured products" (STATE EMPLOYEE).

The respondents reported that products are delivered in accordance with the needs of the schools and menus. It was also reported that farmers are responsible for the delivery and quality of products. Everything is checked upon delivery by those responsible for the food preparation.

When asked about the strengths of the law, responses were mixed. For the nutritionist, the main advantage of this law is that it gives small farms a chance, and is a purchase guarantee for family farms. One of the state employees mentioned how the lawen courages local production, a fact that should facilitate compliance with the legislation. As for weaknesses, the interviewees highlighted the low amount and variety of food offered.

The nutritionist added another important issue: the farmers' lack of knowledge. According to this respondent, farmers should have prepared before the Act came into effect. Ultimately, it was found that the respondents considered the program to be strengthening the local economy.

CONCLUSIONS

The aim of this study was to describe the process of food procurement for public school meals in Bonito, Mato Grosso do Sul State, Brazil. In addition, it sought to identify the main difficulties of that process.

This study revealed the importance of the PNAE to the development of local agriculture. However, it appears that there are still many challenges to overcome. For example, increasing the amount and variety of food produced, including processed foods from family farms, could contribute to reaching the target set for the program. Another element that should be mentioned is the necessity of further training for farmers working in this market, since there are problems with documentation and a lack of knowledge of some processes.

It was found that there is demand for organic food, but it is not being met by the municipality because there are no certified producers. This fact reveals an opportunity for farmers to add value to their production, as well as contribute to sustaina-bility.

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The role of Rural Extension in the viability of public procurement for school meals in Brazil

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***Abstract* – Brazilian's *Programa Nacional de Alimentação Escolar* (PNAE), in 2009, changed his politic bases. It's setting in an important institutional purchasing policy and development of Family Agriculture (FA). The object this paper is discusses the importance of public rural extension service for the viability of the institutional market of School Feeding. The research was conducted in nine municipalities in southern Brazil. Even with a supportive policy environment are still found obstacles to carrying out the institutional purchase, the principal problem are social and productive organization of family farmers. The study showed that farmers need support and technical assistance to relocalizing and reorder the logic of production. But the public rural extension has not been able to do that.**

***Keywords* – school food, family farmers, rural extension.**

INTRODUCTION

The PNAE was established in 1955 and has under-gone several restructurings. A supplementary feeding policy has become in an important development public policy. The PNAE is a universal program, free and meets without distinction all basic education students enrolled in public schools and philanthropic schools with agreement with public power, through the transfer of financial resources. The program's budget in 2014 was R$ 3.5 billion, benefiting 43 million students. The Federal Law 11.947/2009 determines which 30% of this amount - R$ 1.05 billion - should be invested in direct purchase of FA products (FNDE, 2014). This law reshaped the PNAE, therefore the program aims beyond food and nutrition security, the principles of sustainable development, valorization of food culture, healthy food and relocalization of food system. In this sense the inclusion of local family farmers and building the institutional market is one of the key differentiators actions. According to Belik and Chaim (2009) there is a consensus that social policies, when directed to the support of school feeding programs, can generate enormous benefits in terms of food security, education, health and social development. Morgan and Sonnino (2008) emphasizes that public procurement, especially school feeding procurement, has the potential to induce changes in food habits, ma-king consumers of the products of local agriculture. School food plays an important role in designing a new food equation. In Brazil, even with a supportive policy environment are still found obstacles to insti-tutional acquisition of family farmers, the principal problem is the social and productive organization of farmers. These more creative purchasing structures require new skills, which affects all stakeholders in the process (Morgan, 2006). To access the institutional markets the farmers need to develop skills related to the production, management, scale, distribution, processing and packaging (Morgan, 2006; Sumberg et al., 2011).

Authors studying the PNAE say: 1- that local production is not enough to meet the quantity and diversity demanded by institutional markets; 2- a major challenge is the organization of farmers; 3- school feeding requires a lot of processed products and the family farmers have difficulties in legalizing the small agroindustry because the legal framework is geared to large enterprises (Froehlich, 2010; Braga, 2012; Gonçalves, 2013). The PNAE is a public policy that requires an inter-sectorial actions, and many authors have pointed out that farmers have not been able to access the market as they could. A quality service of Rural Extension could be the difference for these farmers develops the skills needed to access the institutional market. Thus, this paper discusses the importance of the public rural extension service for the construction the institutional market of school feeding in Brazil.

METHODS

This is a qualitative research that does one interpretative analysis of the limits for the institutional buy of the family agriculture for school food. Datas were collected in 2014 and were from nine municipalities of Rio Grande do Sul (RS) state.

RESULTS: RURAL EXTENSION AND PUBLIC PROCUREMENT

The company providing *Assistência Técnica e Extensão Rural* (ATER)[2] public in virtually all municipalities in the RS state is Emater/RS, an institution founded in 1955. There are approximately two thousand extensionists presents in 480 municipalities and the hiring is related to two areas: technical and social welfare. In the study, it is perceived that Emater-RS has not a clear institutional guideline able to guide and empower the action of the extension to the institutional market's construction. The action of the extension seems to be guided by extensionist's desire and personal commitment to public policy. The Municipalities studied have human potential and agricultural to meet the demands of PNAE because they have 8,857 farmers with DAP. DAP is a document that characterizes the family farmer. This means a universe of almost 9000 farmers with conditions to access the institutional market. The PNAE require a differentiated action of ATER otherwise will be able to concentrate on some

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stronger farmers or be appropriate by large cooperatives with institutional *Declaração de aptidão ao Pronaf* (DAP), which we denominate distortion of public policy. According to the legislation and PNAE's guiding documents the ATER should act only in the research of FA products in the municipality and in the preparation and execution of sales projects. But we consider that the action of ATER should be more strategic. So it is directed in three main lines: 1- social organization; 2- organization of production (technical assistance focused on the cultivation and processing, product quality, rescue and appreciation of food culture, preparation of projects for access to public policies); 3- and construction of market. In addition, the ATER can contribute to the creation of synergies among the various stakeholders involved with the public policy and among other policies.

In the municipalities studied is a disorderly and punctual performance of the ATER, unable to build a process focused on the development of skills to farmers from production to delivery of products to the institutional market. Because of the historical action of the extension, we expected a more focused effort in production, but this is the area that receives less attention and one of the main problems of the institutional market is the lack of production. Of the nine municipalities only four achieves 30% of FA purchases recommended by law and only one purchase exclusively of municipality's farmers. Two these municipalities exceed 30% of purchases of products by FA. In only four of the surveyed municipalities there is an involvement of public ATER, but this involvement is more related to the organization of farmers and the market, production has not received attention, except in rare and pontual services in some farmers. And the commitment of ATER is always related to one of the technicians. In municipalities studied don't have a technical team activity with public procurement of food school.

The farmers marketing for PNAE in these municipalities claim that one of the biggest obstacles is the production, as these had skill for produce one or two commodity's products as tabaco, soybean or corn. The market PNAE requires diversity and scheduling production and although farmers tend to produce products that were produced for consumption, has difficulty to producing in scale. Lack technical information and training for farmers to build greenhouses, irrigation projects, management of protected crops, plant propagation, driving and management of orchards, use of technologies for organic and agroecological production. The ATER when asked about the deficiencies identified by farmers justifies the insufficient technical assistance at insufficient staff and the lack of appropriate technical training. There is a technical need for farmers and a public ATER institution that is not meeting this need. In five municipalities the ATER is completely absent from the institutional market.

With this study it was found that the PNAE is a tool to promote local development and create stra-tegies for the marketing of non-target products by the conventional market, creating possibilities to develop alternative agrifood systems. The creation of innovative public policies for FA requires a new paradigm of rural extension. But the actions of ATER has been below the needs of farmers and the institutional market's construction.

CONCLUSIONS

The PNAE's market comes against the discussion of short marketing chains and relocalization of agriculture, where remakes ties between farmers and consumers and new food attributes are valued. A key issue is the ability of farmers to relate to the markets. Before the PNAE they commercialize one or two products to middlemen, now they have to meet a market that requires production diversity, timely delivery, do production in phases and broad product quality. The family farmers have been demonstrated that they need support and technical assistance for the relocalization the production.

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Developing local food cooperation and public procurement in Oulu South region, Finland

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***Abstract* – In Finland, governmental programs contribute to the development of the market for local food and to its increased production. One of the objectives is to increase the amount of local food in public procurement. However, the restrictions concerning the use of local food often involve issues with procurement legislation, a lack of information concerning the supply and availability, and the small volumes that are offered – to mention a few reasons. This study looks at the possibilities of increasing the use of local food in institutional kitchens via developing an operations model of a regional network in the food chain in the RuokaNET project. The model will be formed via a case study which was carried out in the Federation of Education in Jokilaaksot (JEDU) in Oulu South region in Northern Ostrobothnia, Finland. The background material was collected by means of questionnaires and interviews, and later on workshops were arranged for producers and purchasers. The final model can be used to promote the networking of local food producers and companies, and their cooperation with the foodservices.**

***Keywords* – institutional kitchens, local food, public procurement, regional networks**

INTRODUCTION

Local food has been on the political agenda in Finland especially in the last few years and it is clearly recognized as a future growth sector. The Government produced a report, based on the proposal for a national food strategy (MMM, 2009), concerning Finnish food policy which was presented to the Parliament in 2010. The promotion of local and organic food was mentioned as a separate area for development. In 2013, the Ministry of Agriculture and Forestry published *Local Food – But of Course! Government Programme on Local Food and development objectives for the local food sector to 2020.* Encouraging a strong increase in the production of organic food and local food is among the main strategic objectives of Finnish agricultural policy. The Local Food Programme (Finland's 72nd government, 2013) includes *increasing the share of local food in public procurement through better procurement skills and quality* criteria as one of the main objectives. The objective is that by 2020 the accessibility of local food will have improved and it will be a natural part of public catering, and that it is also kept in mind in the acquisition strategies of municipalities as well as being and valued in each municipality in Finland.

One of the main measures to obtain these according to the Local Food Programme is that *Local food is promoted in regions and municipalities e.g. by increasing cooperation and dialogue between producers and contractors and by disseminating good practices.*

The public sector (state, municipalities, defense forces, municipal federations) spends approximately EUR 350 million annually on purchasing food and raw foodstuffs, the overall amount is 1-3 percent of all procurements. The estimated share of local food in the food sales was about 10% among public institutions in 2012. A higher share would significantly increase the income that remains in the region and contribute to expanded job opportunities (Viitaharju et al., 2014).

The increased amount of local food used in public kitchens has been promoted with various measures. For example, in some municipalities in the provinces of Northern Ostrobothnia and Kainuu, the recommendations for actions to promote local food procurements were developed up on the basis of workshops arranged for municipal decision-makers and other parties responsible for purchases (Puoskari et al., 2013). On the basis of GIS-based review in Northern Ostrobothnia, the agricultural production and potential for the use of local food focuses on the southern parts of the province (Kotavaara et al. 2014). Previous studies have shown that increasing the use of local food in public kitchens requires more concrete and practical case studies in which the approaches reaching the entire local food chain are developed. Despite the policies on the national-level, the real decisions are made locally and regionally.

The intention of this study is to develop an operations model which can be used to promote the networking of local food producers and companies and their cooperation with the food services. The operations model shows in the form of example how the local food network can be built. The project carried out a case study in the Federation of Education in Jokilaaksot (JEDU)[2] in Oulu South region in Northern Ostrobothnia, Finland. JEDU provides multidisciplinary vocational education within the area of seven municipalities. The target group includes JEDUs kitchens and canteens customers. The present paper introduces the steps taken to develop the model and the preliminary results of study.

BACKGROUND ANALYSIS AND NETWORKING THE ACTORS

The background analysis regarding the current stage of catering services and potentiality of suppliers was formed with the actors at the center. At the first stage, surveys (n=10) and interviews (n=4) for the kitchens in JEDU were conducted for the purpose of finding out the present situation concerning the use of locally produced food, demand and needs. In addition, there were two kitchens with external food service providers, which did not reply to the survey. Questionnaires were also provided to students and staff of JEDU in order to

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[2] JEDU is a member of a specific supply ring which is a coalition of 12 organizations or municipalities co-operating in acquisitions. Member organizations have put together a group of experts to tender the food on their behalf.

ascertain the consumer's perspectives and opinions about the quality of lunch as well as offered information about the origin of food at the canteen in their own unit, for instance. There were total 509 responses from 11 units.

At the second stage, the study surveyed the interest of local food producers and companies (n=22) to be involved in developing the model and cooperation with institutional kitchens.

All questionnaires were carried out electronically. The survey data has been observed using statistical descriptives and non-parametric Kruskal Wallis Test. The interview material has been processed with the content analysis.

In June 2015, the first workshop for producers and food services was organized for the purpose of them getting to know each other and to facilitate discuss about the possibilities and means to increase the cooperation. The participants (n=7) received the background analysis beforehand to review. The second workshop was a continuation of the first workshop and it was organized in September 2015. In addition to discussions, there was the opportunity for producers to make product presentations.

PRELIMINARY RESULTS

All of the kitchens were already using some local food products, but with notably varying degrees. The kitchens seemed to have great possibilities to increase and diversify the usage of different products such as meat products and flour and other grain products. They also stated they had a strong interest in product development in cooperation with producers as well as making site visits to farms and food processors in order to improve their knowledge of local production.

Appreciation of local food was apparent among customers, while 70 percent of the respondents regarded the use of locally produced food in the food services as either important or very important. In addition, the plain information about the origin of food was seen as necessary still rather inadequate at the present moment. There were statistically significant differences between different units as well as between students and staff.

Some of the producers already delivered products to JEDU or other public clients. Overall, the producers seemed to be interested in delivering products to public kitchens and developing their marketing (with average values on 4.4 and 4.5 (on a scale from 1 to 5, with 1 being *not interested at all* and 5 being *very interested*). They also had an interest in product development with institutional kitchens.

In the first workshop, a representative of the purchasers2 noted that they were willing to add a special local food day in the menu. It was also noted that the seasonality in the menu planning has to be taken into consideration more carefully on behalf of food services. It was hoped that local food producers and food companies would be active towards foodservices in the future.

DISCUSSION

As the information in this area about the production is quite poor among the kitchens and many producers aren't really aware of the needs of public kitchens, it is important to arrange events for these two different parties to have an exchange with each other. The first workshop was regarded to be very useful and there were lot of expectations about the second workshop and wider participation.

The project will conclude in December 2015. After the second workshop in fall, the results will be assembled in order to build a regional network model which contains the suggestions for the measures and the organization via which the corresponding regional operation can also be implemented elsewhere. In practice, the model will include a simplified description of the different phases executed in the project and suggest measures to start developing corresponding cooperation elsewhere.

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Institutional procurement of smallholder farming products in the Rural Territory of Seridó in Paraíba (Brazil)

Márcio CANIELLO, Soahd RACHED, Nina CANIELLO, Wendell LIMA[1]

***Abstract* – In the scope of The National Sustainable Development Strategy based on the fight against hunger and poverty, where smallholder farming constitutes a key sector, the government of former President Lula da Silva (2003-2010) implemented several innovative public policies, such as the National Program for Sustainable Development of Rural Territories (PRONAT), aiming to strengthen smallholder farming through participatory deliberative forums. Besides, it innovated old public policies such as the National School Feeding Programme (PNAE), requiring that at least 30% of the amount transferred by the Union to municipalities and states to purchase food for school meals be used to purchase products from smallholder farmers. This work aims to analyse the performance of institutional procurement of smallholder farming products in the Rural Territory of Seridó in the state of Paraiba between 2010 and 2014, by confronting environmental, cultural, institutional, organizational and political constraints with the productive and organizational potential of smallholder farming.**
***Keywords* – Territorial development; Public policies for rural development; Fighting hunger and poverty.**

NATIONAL SCHOOL FEEDING PROGRAMME (PNAE)

The National School Feeding Programme (henceforth, PNAE), created in the 1940s, is one of the largest and most broadening world programs concerning universal service to students aiming to ensure the human right for adequate and healthy food. In 2014, it provided nearly 42.2 million students with an investment of about US$ 1.15 billion[2].

Since 2010, municipalities and states have been required to invest at least 30% of PNAE funds to purchase smallholder farming products. In 2012, 81% of the municipalities bought products from smallholder farmers and 50% of them reached the minimum purchase percentage totalling US$ 112 million (Brazil, 2014). Hence, only 37% of the budget was used by those municipalities and states.

NATIONAL PROGRAM FOR SUSTAINABLE DEVELOPMENT OF RURAL TERRITORIES (PRONAT)

Aiming to overcome the "sectoral management" of public policies for smallholder farming, in 2003 the Brazilian government adopted the "territorial approach" to broaden the scope of these policies and expand the participatory and decision-making character of smallholder farmers in planning, applying, managing and monitoring these policies. (Brazil, 2003; 2008).

Thus, in twelve years 239 rural territories accounting for groups of municipalities united by identity and socio-cultural, economic and environmental factors were created as a result of the commitment between the government and civil society. Each territory created a deliberative forum comprising equal numbers of civil society representatives and the government in order to establish the "social management cycle" of public policies. Since the PRONAT was created, the Ministry of Agrarian Development (MDA) has funded about 9,000 projects, totalling US$ 798 million in investments.

In 2014, the federal government decided to have the PNAE monitored by territorial forums, assisted by university extension centres in territorial development ("NEDETs") (Brazil, 2014b). This work describes the action-research process on institutional procurement of school meals in the municipalities from the Territory of Seridó in Paraíba developed by NEDET Seridó/UFCG[3].

THE RURAL TERRITORY OF SERIDÓ IN PARAÍBA

The Territory of Seridó in the state of Paraíba is located in the semiarid zone of the state and consists of seven municipalities. It has an area of 2,284 km2 accounting for 4% of the state territorial extension. Its climate has high temperatures and rainfall irregularities (less than 500 mm/year), causing droughts over extended periods of time.

The territory has 64,819 inhabitants. 54% of its population live in urban areas and 46% in rural areas (Brazil, 2011). Out of 6,270 rural establishments, 5,333 (85%) are smallholder farms which hold 84% of the employed and generate 82% of revenues in the sector, accounting for US$ 16 million in 2006 (Brazil, 2009). There are 5,920 households distributed in 168 rural communities in the territory, and out of 122 of them (73%) have formally organized associations or cooperatives, while the remaining communities have kept informal cooperation relationship. (Paraíba, 2014). The role of the Collective of Organizations of

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[2] http://www.fnde.gov.br/programas/alimentacao-escolar/alimentacao-escolar-consultas/alimentacao-escolar-dados-estatisticos, access on July 8, 2015.

[3] Research and Extension Project Supervising, Advising and Monitoring Instances of Social Management of Territories of Borborema, Curimataú and Seridó (Paraíba), approved under the Public Call CNPq/ MDA/SPM-PR No. 11/2014.

Smallholder Farming linked to the Semiarid Articulation (ASA/Brazil) over twenty years has stood out in the territory bringing together various associations and cooperatives helping them to develop the structure of the production units and to prompt trading strategies of its products. Table 1 shows the productive potential of the communities:

Table 1. Yield potential of rural communities

Activity	Communities	%
Goat and sheep breeding	90	54%
Cattle	67	40%
Planting	43	26%
Aviculture	27	16%
Fruit farming	23	14%
Horticulture	19	11%

Source: Paralba 2014

THE INSTITUTIONAL PROCUREMENT IN THE TERRITORY

Considering the productive and organizational profile of smallholder farming in the territory, the existence of public institutions for technical assistance and rural extension and School Feeding Councils (CAE) in all municipalities besides the implementation of the Territorial Development Forum in 2008, it would be expected that the purchase of school meals products from smallholder farming would reach the minimum of 30% of PNAE budget, but this has not occurred as the territory follows the same low national performance.

To better understand this situation, NEDET Seridó/UFCG team carried out a diagnosis in all municipalities through an action-research with discussions involving representatives of municipal boards of Agriculture and Education, nutritionists, CAE members, smallholder farmers represented by their unions or organizations, representatives of the Municipal Councils for Sustainable Rural development (CMDRS), technicians from local EMATER (Enterprise for Technical Assistance and Rural Extension) and public schools representatives.

In general, the following problems were identified: (1) environmental factor: the adverse conditions of the semiarid for agricultural production, especially the constant occurrence of droughts impairing the regularity of product supplies; (2) cultural barriers, such as the resistance demonstrated by students, students' parents and cooks regarding the items in the regional menu; (3) budget constraints: low amounts allocated to municipalities by the federal government as well as financial constraints of the municipalities; (4) low institutional capacity: lack of sanitation inspection preventing the certification of the products from smallholder farming; there are few nutritionists in public service; public biddings poorly written and inadequate to the local productive capacity; technical assistance deficiency; unnecessary payment of state taxation due to lack of measures to grant exemption; (5) organizational problems: malfunction of the CAE, with nonqualified counsellors; weak cooperatives and associations; problems with contractual relations between farmers and the government; (6) lack of political commitment when executing the purchases perceived through various subterfuges such as the use of middlemen and issuing a single annual public bidding for products purchase.

AN AGENDA

This report was presented in the Forum establishing an agenda for tackling the problems, focusing on four areas: (1) the creation of an intermunicipal consortium of sanitation inspection; (2) qualification of the various actors involved in the process (farmers, counselors, nutritionists, cooks, students, students' parents, technical assistants, public workers); (3) empowerment of the forum members to exert social control; (4) NEDET consulting to write public biddings, following the process defined by the FNDE (National Fund for Education Development) through the Forum requirements.

This agenda will be a learning tool to develop local skills and competences in order to face the problems above, aiming to optimize government procurement of smallholder farming products in the territory.

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Revaluing institutional food procurement Organic food on the public plate in Denmark – top down or bottom up?

B.E. Mikkelsen[1]

***Abstract* – Organic food and farming strategies has enjoyed increasing political support in Denmark for the past decades. One of the important pillars has included a priority to converting a large a proportion of the public sector foodservice as possible. In the Organic Action Plan 2020 the Danish government has committed itself to ambitious goals as regards to the organic share of the public food supply chain. However affecting the supply chain of public food is a complicated process since it affects a myriad of stakeholders, technologies and organizational procedures. Organic sourcing is dependent on knowledge, skill and competencies of public food workers as well as on the attitudes and preferences of the end users in a broad range of different public food outlets such as school, kindergarten, nursing homes hospitals, canteens and prisons. This paper looks at the implementation of the Danish Public Organic Procurement Policy (POPP) over the past decade. It presents new data of the implementation rate based on new procurement data from the foodservice suppliers and the penetration of organic foods in different sectors of foodservice and discloses secular trend on that development based on statistical bureau data. It uses a technology perspective to analyses how the role of attitudes and education among staff influence the implementation. It analyses the role of the supply side and the procurement interface in the promotion of organic food. It uses a policy implantation approach and concludes that organic procurement policies cannot rely entirely on high level policies. Organic public procurement id dependent on the engagement and involvement of shop floor level workers as well as the active commitment from suppliers, procurement officials and middle level administrative management. It concludes by listing recommendations for POPP implementation.**

***Keywords* – organic public procurement, catering, food service, institutional catering, policies.**

INTRODUCTION

Public procurement of organic foods has been spreading as a part of organic food and farming policies in many European countries. (Lehtinen, 2012; Sonnino, 2009). When it comes to organic supply strategies growing number of national polices point out the large-scale consumers an important sales channel in local governments, at regional and municipal level. Public Procurement increases the interest due to its potential for creating desired social and economical outcomes (McCrudden 2004; Stefani et al., 2015). Municipalities and counties in Denmark are responsible for both the direct environmental management and protection of land and water resources as well as for the procurement of large amounts of foods for hospitals, nursing homes, schools, nurseries, kindergartens and other institutions and thus the direct benefits of shifting food supplies from conventional to organic foods have become obvious. As a result, organic food and farming strategies has benefited from increasing political support in Denmark since the early nineties. In the recent Organic Action Plan 2020 the Danish government has set out to reach a goal that 60% of all public meals should be organic by 2020 (Government's Organic Action Plan, 2014) and in the Danish population in general there is broad support to the idea of promoting organic food in public kitchens (Mørk et al 2014). Total sales of organic food and beverages for the food service accounted for close to 10% of total public food procurement in 2013 according to Statistics Denmark (2015). The public part of the large-scale foodservice has been particularly successful in implementing organic procurement, as the total foodservice sector the organic share is only 5% (Statistics Denmark, 2015).

This paper aims to give an account of the Danish Public Organic Procurement Policies (POPP's) and its impacts and to identify some of the factors that enable/constrain sustainable procurement practices. It aims at identifying the dynamics in the decision making process. It takes as a point of departure in the Ekologika organic public food-training program and investigates the role that top-down as well as bottom up dynamics plays in the implementation process.

CONCEPTUAL FOUNDATION

Decision-making in the public tends to follow different and sometimes contradictory pathways, often referred to as the top-down and bottom-up approaches. Traditionally it was held that policy objectives was transformed into practice in a top-down flow as suggested by Mazmanian & Sabatier (1989) and this approach presuppose a clear division between policy formulation and implementation. In this pathway decisions are made by limited number of individuals with high positions of power within an organization.

However 25 years of experience in use of organic foods in the public has shown that government policies are not necessarily implemented as anticipated. Governance and management of public food is a complicated process that requires the collaboration of many different actors for policy goals to be reached. Lipsky suggested that a bottom-up pathway to decision making is more likely to describe what happens in real life. By referring to Street Level Bureaucracy Lipsky (1980) emphasizes that there is strong likelihood that since those at subordinate shop floor levels are crucial in the process of implementing the policy. The collective bottom-up decision making pathway often evolves as a result of longer policy process. The issue of organic foods are debated and negotiated among different members of the food service staff, which eventually leads to some kind of consensus about organic food among the members of the organization. Research have tried to synthesize previous research in order to lay out general principles for drivers and constraints for policy and its implementation and to study the impact of the policy formulation process upon implementation (Winter, 1990).

METHODS

The paper is based on recent literature on the progress of POPP's in Denmark and on a sample of interviews with five participants of the Ekologika organic public food-training program. The Ekologika program has been running from 2013-2014 and engaged 96 public institutional kitchens serving 12.300 citizens and with an involvement of 400 public food workers. Education and training of foodservice staff has been one of the most prominent policy tools to assist and drive POPP's in Denmark over the past decade. It is at least as important to change organizational cultures as well as attitudes and beliefs about what good public food among the concerned actors. By taking this approach it is assumed that knowledge, skills and competencies (KSC's) of public food workers are an essential part of the foundation - but that the affection – the intention and willingness to engage in change processes relate to POPP is just as important since organic food on the plate include significant different new routines to be learned and practiced. As such public food works has been

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the main target of the implementation efforts whereas attitudes and preferences of the end users in a broad range of different public food outlets such as school, kindergarten, nursing homes hospitals, canteens and prisons has in comparison been regarded as less important.

RESULTS

The interviews were training program participants pointed to some interesting aspects of the implementation process. In general the trainees does not consider implementation as only being about increased knowledge. They point also to the aspects of values and beliefs in the organic idea as such. And in general they value the training approach to implementation, the collectivity and the idea of simultaneous training and implementation as valuable

Shop floor workers are the interface to end users

Public food workers represent the ultimate interface to the eaters and as such they need to be defendants of the "organicness" of the menus and dishes served in the various establishments of public food service. The interviewees reported many instances of exchanges of opinions with the end users.

"they [the end users] dont give a damn" as referred to by a public canteen manager to great affection and support "great idea – I fully support" for the idea expressed by a school catering manager.

These encounters with end users were found to create a need for learning how to find new resources to address the challenges. One of the results has been that less meat and more vegetables have been introduced as a guiding principle. Thus the staff during the training sessions began engaging in developing new strategies for use of ingredients.

Public organic agenda

One of the important experiences of the training that was expressed in the interviews was that personal beliefs about agricultural values has an important role to play in the daily professional life of foodservice workers. The interviews showed that engaging in discussions on affective dimension of "organizing" the public mealculture values was an inherent part of the implementation process and the training events.

"(…)there are others that I constantly have some tremendous discussions with about ecology" (Public canteen manager)

Learning to change the supply chain

Learning how to control and change the inflexibility of the public procurement and supply chain was contracts constantly touched upon in during the training and referred to in the interviews. Along with the frequent shortages of sufficient organic supplies this was perceived as a major barrier – and something that bringing staff together from different backgrounds in collective training – might act as a positive contribution.

"(…)we enjoy having direct contact with a supplier who is working hard to deliver what we want when it comes to organic products". (School catering manager)

Having the direct contact at a local level also seemed to develop the relations with the supplier and having more direct feed-back mechanisms when it comes to for instance quality assurance procedures.

Support from management is perceived as key

It was mentioned in several interviews that firm decisions from of the municipality has helped to facilitate the implementation and that resistance at shop floorlevel in many cases has been limited because the managements stand point has been made clear. However despite the top down support the POPP's are seldom able to avoid financial disturbances. As mentioned in interviews.

"(…)I am a bit disappointed. Both parents and management think since it's fine with ecology, but it is expensive and we don't get more money. So moral support is fine but financial is also important". (School foodservice worker)

Social learning leads to job satisfaction

The interviews point to the fact that being involved in the implementation process in a learning manner is adding to job satisfaction.

"(…)for us it has developed into a sort of competition. So by developing theorganic in our own way we have got larger sense of ownership and achieved more professionalism and pride in what we deliver". (School foodservice worker)

Especially the collectivity that lies in accompanying the ongoing implementation process with simultaneous training activities and letting the learning take daily life problems is appreciated as a new type of problem based learning.

"The idea of getting together and exchange ideas with caterers that are different from ourselves are important and we learned a lot from each other in the group". (Kindergarten foodservice worker)

"The biggest challenge is definitely to keep up the commitment. I'd like to see that the group I was part of in the project could still hold together, share experience, sharing recipes etc". (School foodservice manager)

Training as a catalyst for the implementation

In general the training seemed to work as an important catalyst for the implementation process and was brought up in more of the interviews.

"(…)to make the implementation and the financial obstacles meet has actually gone easy. We started in February with approximately 20% organic produce and now we are at 70% half years later" (Public canteen manager)

"Most of my knowledge on organic conversion I've gotten through the training and subsequent experience". (Kindergarten foodservice worker)

The case of implementation of organic procurement in Denmark offers valuable insight into the dynamics of the implementation process. It illustrates how the implementation process seems to be heavily influenced by the KSC of the public food workers that are employed in the purchasing, reception and preparation of the food. The training has been characterized by having focusing on KSC but to a great extent also allowed for consensus process the affective part of the change process. This combination is believed to be essential and the two stream – the KSC and the affective part is clearly comes to life in the interviews. The interviews indicate the organic "mainstream" has become an accepted standard for food on the public plate. This approach represents the bottom up dimension of the POPP's over the past five years in Denmark. The top-down side of the implementation on the other hand represents the management commitment.

By bringing several hundreds of public foodservice together in a learning context seems to bring about important dynamics that seems to help problem solving. Moreover, the training seems to be a valuable form of collective problem solving and new solution.

DISCUSSION

From the interviews with the training program participants a number of themes crystalized. The fact that shop floor workers consider themselves to be an important interface to end users in the public foodservice and that the public organic agenda comes is not only a question of knowledge about facts but comes very close to personal beliefs and values about the agro-food system.

Another important theme was that collective learning about how to change the supply chain is important and despite all the advantages of bottom-up from management is perceived as key to successful implementation. The interviews also revealed that the "social" approach by learning has the potential to lead to increased job satisfaction. In general the interviews agreed that collective training can be considered a good catalyst for the implementation process and that it needs to contain components of KSC.

In general the POPP's has been successful in reaching ambitious goals of market share and the training approach that works through mechanisms of problem based learning, social learning and participation seems to have been an important part of the implementation process. However this approach does not work in isolation.

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Linking local food systems to institutional buyers

S. Kelly, L.F. Joppert Swensson[1]

Abstract **– Supporting governments design and implement local food procurement programmes for public institutions has become a priority for the Food and Agricultural Organization of the United National (FAO). This paper aims at presenting the findings and policy recommendation from FAO experience on the field and on normative case studies on P4P and Bra-zil's institutional procurement programmes.**
Keywords **– Local food systems, institutional buyers, FAO.**

INTRODUCTION

Food security in developing countries is hindered by inefficiencies in the food system and limitations in market access. Public sector institutions such as schools, hospitals, food reserve authorities, prisons, the military and development agency programmes can create effective demand for locally procured food and, as such, are potentially important markets for smallholder farmers.

Typically these buyers do not have a profit motivation and are usually driven by the need to acquire food products for consumption within their own institutions or as part of food security programmes. They need to ensure high quality standards but minimize costs due to the fiscal onus on the public sector. They are generally guided by public procurement policies which can leave little room for flexibility in contract negotiation or choosing suppliers, tying them to specific safety and quality standards, and regulated payment and logistics mechanisms.

Fostering smallholder engagement with large domestic buyers can increase access to close-to-home and familiar market outlets with less demand-ing requirements compared to more stringent export markets. This type of approach will also promote the formalization of markets – a crucial component for transforming agriculture into a legitimate and competitive sector for poverty reduction and economic growth.

Local food purchase initiatives are also a good example of how market-oriented strategies can improve food and nutrition security for vulnerable communities while fostering economic development and smallholder integration in markets. Recognizing the importance of this approach, the Comprehensive Africa Agriculture Development Programme (CAADP) has established school feeding based on nationally procured food as regional and national priorities, while the New Partnership for Africa's Development (NEPAD) also launched a pilot Home Grown School Feeding and Health Programme based on local food procurement.

As such, institutional procurement at scale has considerable potential to stimulate the domestic transformation and formalization of food supply systems while contributing to local food security and nutrition. Despite its potential, local procurement as part of food systems development has been inadequately addressed.

The benefits of linking public food procurement to local farmers are multifaceted as it has the potential for governments to simultaneously address priority development, economic, nutrition and food security goals. Supporting governments design and imple-ment local food procurement programmes for public institutions has become a priority for the Food and Agricultural Organization of the United National (FAO).

In the joint Government of Brazil/FAO/WFP initiative on Purchase for Africans by Africans project (PAA) launched in 2012, FAO support linking local food production to food assistance and school feed-ing programmes by working closely with local communities, schools and smallholder groups.

FAO has also contributed regularly to the implementation of the World Food Programme's Purchase for Progress programme (P4P), using its technical areas of expertise to support linking smallholders to WFP markets; addressing food losses; access to finance; promoting sustainable production technologies; and food safety and standards.

FINDINGS AND POLICY RECOMMENDATIONS ON LINKING LOCAL FOOD SYSTEMS TO INSTITUTIONAL BUYERS

Learning from field programme support to these initiatives, and normative case studies on the P4P and Brazil's Public Food Procurement Programme and National School Feeding Programme have re-vealed a number of findings and policy recommen-dations that include the following areas:

Fostering intra-ministerial collaboration

The goals of public food procurement programmes vary from country to country and programme to programme, however common to all is their multi-faceted nature in trying to address a number of development and economic goals, from child nutri-tion to linking smallholder to local formal markets.

As such, this also calls for a multifaceted legal, policy and institutional enabling environment, requiring a coordinated and collaborative multisectoral approach and inter-ministerial collaboration. The success of public food procurement programmes is therefore more likely if there are clear institutional roles with overarching legal and policy framework that guide collaboration between ministries, policies, strategies, institutions and interventions – running from the ministry down to the local level where food procurement takes place (FAO, 2013).

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Aligning policy, legislation and institutional processes
Public will and policy reform is key to the transformation of local food systems. However, policy reform is not enough, if traditional procurement procedures, as stipulated by public procurement policy and legislation, are left unchanged. Policy reforms need to be accompanied by alignments in legislation, strategic frameworks, processes, as well as institutional reforms. Once national policy reforms with appropriate legislation and frameworks have been adapted to local procurement needs, individual public institutions, if operating under decentralized systems, can more easily modify their own internal procurement and logistics systems to comply with the needs of small suppliers (Takagi et al., 2014).

Customizing decentralized public food procurement
Generally decentralized procurement systems are considered more effective for reducing waste, avoiding large-scale fraud, improving responses to endusers needs, while also encouraging growth of the market economy to rural areas and towns (OECD, 2010; Thai, 2008). However, many factors have to be taken into consideration when designing the management structure of procurement systems. These include the country's size, governance structure, the volume and type of food required, beneficiaries needs, and institutional procurement capacities. Decentralized procurement can take place at the level of the institution, district government, municipality or at state level. A decentralized system means that there are more opportunities for local-to-local linkages that suit local small farmers and enterprises supplying food and end-users such as schools, with spill-over effects for the rest of the local community. As the information interface is more immediate delays can be avoided, an important factor in maintaining the nutritional value of fresh food consignments. The local dietary preferences of end-users is also more likely to be satisfied, for example school children receiving similar food to what they would be served at home. However, in some cases it may be necessary to have a combination of decentralized and centralized systems, for instance when the required food is not available locally, if the food needs to be fortified in bulk, or if local institutions do not have the capacity to procure food cost-effectively.

Developing procurement mechanisms that respond to smallholders' capacity
Institutional reforms need to be designed according to the capacities and characteristic of smallholder suppliers - while still maintaining the core principles that protect the interests of the institutional buyer and public sector funds. Low-cost procurement innovations will be required, with for instance tools for improvements in; forecasting demand and funding needs so that food orders are regular and predictable for smallholder production planning; flexible payment mechanisms that include, for example cash on delivery and advance financing; and logistics systems that facilitate smallholder bulk marketing etc. Smallholders will also require help in improving their collective capacity to meet food safety and quality standards required to access public institutional markets in a timely fashion and with sufficient quantity. Farmer organizations are important vehicles in strengthening smallholder supply to public buyers. Support to local procurement can also incorporate and foster existing trading mechanism, such as traders or primary processors. These smallholder market linkage models are also key to support, particularly in the absence of functioning farmer organizations, or in parallel while their capacity is being strengthened.

CONCLUSIONS

Better understanding is needed of the potential that public institutional procurement of food from small famers might have in stimulating and supporting transformative development of food supply systems. The findings outlined above provides some guidance on the topic however these insights have been constrained by a lack of impact measuring and evaluations systems. While case studies do indicate positive impacts they are for the most part anecdotal and need to be validated with quantitative impact assessments to demonstrate potential returns on public investments. Demonstrating, with quantitative analysis, the impact of linking public demand for food to local food market systems to improvements in the nutrition and livelihoods of children, farmers and on local economic development programmes will provide the much needed evidence for policy makers and donors to allocate more resources to local food procurement programmes.

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Present Innovative Aspects in Public Policies of Agriculture Food Procurement of the Brazilian Family

José Roberto Rambo[1], Silvia Maria de Almeida Lima Costa[2], Gilmar Laforga[3]

***Abstract* – The aim of this article is to demonstrate the innovative aspect involved in public policies for food acquisition of the Brazilian family farming. Creating alternatives to improve performance standards, in both, food security (of quantitative order focusing on hunger containment), and the design of new market mechanisms mediated by public organizations, Brazil innovates determining an institutional environment, effectively able to create incentives for a quality capture of the food products, produced by family farmers, which would not occur in the sale of equipment of traditional distribution channels. This solves a market organizational failure for this segment. Using a theoretical cut based on industrial organization and Neo-Schumpteriana approach, some constraints are discussed on the extent of the screen policies, namely: the Food Purchase Programme - PAA, the Brazilian School Feeding Programme or National School Feeding Programme - PNAE and the Paulista Program Social Interest Agriculture - PPAIS (operating in the State of São Paulo). The business model innovations, institutionally created, provide greater scope for the PAA and require major adjustments to the other two programs in achieving the stated objectives, referring to the need to review the coordination mechanisms between the social participants involved.**
***Keywords* – PAA, PNAE, PPAIS, innovation**

REVIEW

Over the last decade Brazil has experienced several important changes related to the construction of legal provisions and public policies aimed at family farming (SCHMITT; GRISA, 2013). Especially since 2003, a place was gained in the public policy agenda of rural development, construction / development of institutional markets for family farmers. This occurred with the formulation of public policies which specifically emphasize the difficulties of access to farmers' markets segment, namely: PAA (Food Purchase Programme), PNAE (Brazilian School Feeding Programme or National School Feeding Programme) and PPAIS (Paulista Program of Agriculture of Social Interest).

The PAA was created by Law No. 10,696 / 2003 (BRAZIL, 2003), as part of strengthening family agriculture policy, is considered the first public policy to support commercialization of products produced for the segment. The PNAE, although in 2014 has completed sixty years, only to Law No. 11,947 / 2009 (BRAZIL, 2009) is institutionally formalized the relationship between valorization of origin, family farming and food offered in school environments, which represents the opening of a direct marketing channel between local or regional family farming and the food offered in schools to meet the demands of its meals menu. The PPAIS, created by Law No. 14,591 / 2011 (SÃO PAULO, 2011), is one of São Paulo State Government program, to link the demand from institutional market (schools, hospitals and prisons) to the supply of products from family farms, also rescuing the valuation principles of origin.

Schumpeter emphasized the importance of innovative arrangements for the profitability of organizations, highlighting, among the ways to innovate, those classified by the author as "new combinations", represented by: a) introduction of a new property that consumers were not familiar with, or a new quality of a certain property; b) introduction of a new production method untried within a certain productive or commercial branch, and may also consist on a new way to commercially manage a commodity; c) opening a new market, for example a market in which a sector in particular of the industry had never had access to before; d) achievement / discovery of a new source of raw materials or semifinished products, independently of the previous existence or non-existence of the source; e) establishment of a new organization, such as creating or breaking a monopoly position (Schumpeter, 1982. p. 48).

Continuing the principles of Schumpeter, the neo-Schumpeterian evolutionary theory by emphasizing the endogenous nature of the innovative process, highlights the influence of the institutional environment, not only as a factor that orders and regulates the economic agents behavior, but even interfere in the way these agents perceive reality, how ongoing transformations are exaggerated, and how they learn (SERI, 2003; FELIPE, 2008). Thus, innovation is perceived also as a social process (EDQUIST; JOHNSON, 1997) capable of formulating collective solutions in line with the institutional arrangements being able to develop learning processes. For Kim (1993), learning is a process of responses to stimuli and changes in the external environment.

The three programs are meant to strengthen local, regional and marketing networks circuits, offering concrete experiences (stimulus) production for marketing in a collective basis, facilitating the creation of social capital. The new aspect of the underlying reality the formulation of these, stresses, among qualitative attributes, aspects such as freshness of the products produced locally and regionally, and on the other hand, the requirements become more flexible of the extrinsic attributes related to product quality, normally required in the traditional retailers markets, as standard, uniformity, quantity and regularity of

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supply. Another aspect of this innovative PAA and PNAE is treated respectively in Articles 19 of Law No. 10,696 / 2003 and Article 14 of Law No. 11,947 / 2009, leaving in the background the logic of institutional guarantee of last resort, in which the lowest price prevails, to favor the institutional guarantee of first instance for products from family farms, taking into account the average prices in regional markets. The waiver bid processes for corporate procurement represents a relief of constraints on government acquisition, effectively ensuring the participation of family farmers as suppliers. In PPAIS, by Decree No. 60,055 / 2014, the public call should also emphasize the need to "contain the price to be paid for the acquisition" (SÃO PAULO, 2014). For the PAA marketing by producer groups, as well as qualitative attributes, provides for the presence of small volumes and considerable diversity of food (MDS, 2014), also including farming in nature products, beside the supply of agricultural products manufactured / processed by farmers. The PNAE provides "Sweets supply and / or sweet preparations for up to two servings per week, equivalent to 110 kcal / portion" (MEC, 2013). In PPAIS, the purchase of food products can also be natural or manufactured (SÃO PAULO, 2011).

In PNAE besides these aspects, the menus must follow the nutritional references, dietary habits, culture and local food tradition, to ensure an adequate healthy diet (BRAZIL, 2009). Currently PPAIS program is less demanding regarding these requirements, but it imposes the restriction of a regular supply, providing with the acquisition of 30% of the products from family farms, when the "impossibility of regular and constant supply of foodstuffs for farmers or their organizations " (SÃO PAULO, 2011). The appreciation of the production of organic and agro ecological origin is another innovative aspect of this public policy of the PAA and PNAE. In this case the PAA has the stated objectives "to promote and enhance biodiversity, organic and agro ecological food production ..." (BRAZIL, 2012) and PNAE "to encourage and promote the use of organic and / or agro-ecological products and socio biodiversity "(MEC, 2013). For such products, both programs provide a 30% increase in the reference price (SCHMITT; GRISA, 2013).

Encouraging social organization of families, present in the relationship between family farming and public policies, can induce the promotion of collective learning processes in response to the stimulus offered institutionally (in designing Kim, 1993), by the presence of defined and stable marketing channels. Of the three programs that represent new markets for institutional formats, the generated business model innovations allow a greater range to the PAA, requiring some adjustments of the other two programs in order to be more effective.

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Dynamics of the National School Feeding Programme at state schools in the city of Santa Maria-RS

Rita Inês Paetzhold Pauli, Jéferson Réus da Silva Schulz, Bruna Tadielo Zajonz[1]

***Abstract* - The article shows the operational dynamics of the National School Feeding Programme (PNAE) in state schools of the city of Santa Maria-RS. The meth-odological procedures include, in addition to the re-view of the literature about the theoretical approach-es of the New Institutional Economics (NEI), an em-pirical analysis performed from the use of direct doc-umentation technique in 14.63% of state schools in the city, emphasizing relations involving the buying and selling processes by representatives of formal and informal social groups. The results infer that the administration of PNAE resources has taken place efficiently, but there were some failures in govern-ance and perception of quality of school meals. These results could form the basis for the improvement of complementary policies and specific forays into infra-structural elements, enabling better quality in school meals and resulting in improvements for all social groups involved.**

***Keywords* - Family Farming, Institutional markets, Food and Nutritional Security.**

INTRODUCTION

It is known that the PNAE has as main objective to attend school feeding in public schools and other community organizations, since these are contracted by the government, through the purchase of food from family farms. The program transfers funds seeking to meet the students enrolled in basic education, which includes early childhood education, elementary school, high school and adult education.

The program, based on guidelines established in formal laws and regulations, acts as an important institutional segment in the strengthening and development of family farming because it guarantees a market for products of this kind. For Schmitt and Grisa (2013), the program contributes to build institutional markets for family farmers and for the promotion of food and nutritional security in Brazil.

Because of the importance that the institutional markets and food and nutritional security account in the development and strengthening of family farming, as well as the need to guarantee healthy and safe meals to the students in formation, the present study aims to describe and analyze the dynamics of school feeding under the National School Feeding Programme (PNAE) in state schools of Santa Maria-RS.

The overall objective of the research consists of explaining administrative dynamics of PNAE resources in state schools of the city of Santa Maria-RS, and observe whether they are acting in accordance with the standards established by the program, verifying the perception in relationships involving the operationalization of the PNAE by the managers and heads of schools. In addition, it seeks to describe the standards established by PNAE that guide the current format about the conditionalities of the program, explaining the specific actions of state schools in the city of Santa Maria-RS in concerning the administration of PNAE resources.

INSTITUTIONAL MARKETS

In the context of public policies to strengthen and develop family farming, institutional markets arise and according to Silva and Silva (2011), these are markets that present many opportunities for enterprises of family farming. Among these opportunities are: strengthening organizational social processes of rural enterprises; the possibility of marketing agro-ecological products; and the possibility of productive diversification in order to meet a new demand that is present. According to these authors, these markets guarantee the marketing of part of the family farming production and open up possibilities for the emergence of associative enterprises, so that they have lines that serve as working capital for the purchase of production of the members.

The institutional purchase of family farming is thus part of a process that recognizes the need to think of a form of food production that meets the nutritional needs of the population and ensure the social and economic evolution of family farmers, from alternative production and food marketing forms. These alternative forms include the creation of short chains of production and marketing, approaching the relationship between producers and consumers, strengthening social relationships, valuing the productive diversity and meeting the needs of public institutions, enabling access to healthy and quality food for the population with a view to promoting food and nutritional security.

FOOD AND NUTRITIONAL SECURITY

Food and nutritional security is defined as a strategy or set of actions consisting on the realization of the right of all to regular and permanent access to quality food in sufficient quantity, without compromising the access to other essential needs, based on food practices that promote health that respect cultural diversity and that are environmentally, culturally, economically and socially sustainable.

It should be noted that food and nutritional security must be intersectoral and participatory and plays an important role in strengthening family agriculture, as it advocates to the so called food sovereignty, giving sovereignty to those who practice family agriculture, since it is guaranteed to them the right and autonomy

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of decision on what to produce, for whom to produce and under what conditions to produce. The PNAE presents itself as one of the basic programs of the Food and Nutritional Security Program to be able to promote intersectoriality of two crucial issues surrounding the reality of developing countries and that relate to food and nutritional security.

METHODOLOGY

For this study it was used to direct documentation technique, carrying out data collection through the application of forms between the months of April and June 2014, at the place of occurrence of the phenomenon. Thus, we chose a field research that started with bibliographic review in order to guide the research objectives and to give theoretical support to the topic discussed.

Considering the similarities between the infrastructure elements of the schools, it was decided to apply the forms in 6 schools that meet all of the features present in the state schools in the city and are also the schools that have the highest number of students. This procedure allows more precisely seizure on the implementation of institutional buying, since we started with the hypothesis that a higher volume of purchases could cover a wider range of products.

RESULTS AND DISCUSSIONS

Among the schools interviewed, all of them get the students' food products from cooperatives. Research shows that in none of the schools the products are purchased directly from farmers. Respondents argue that there is little interest of the city's producers to provide food for school feeding, and that is a consequence of bureaucracy faced by both producers and schools themselves in the process of adaptation to PNAE standards.

Regarding the questioning on the type of products that are used in the composition of part of the school meals production: a) in one school it turns out that most products directed to students feeding is in natura; b) in two schools the composition of most of the products is semi industrialized and industrialized; c) in other two schools the products used are mainly in natura and semi industrialized and d) in one school most of the products are, for the most part, semi industrialized.

Research shows that among the major difficulties faced by schools in relation to PNAE are the compliance to the legislation intrinsic to the program, accounting values because of all bureaucracy surrounding the process, the lack of adequate structure to make school lunches, the modest amounts of money transferred in relation to the number of students and the lack of choice of where and from whom to buy the products for feeding schoolchildren. In this sense, it is emphasized that the state role is precarious, and in 5 schools the state would not have provided the necessary conditions so that they could meet the standards and PNAE guidelines.

FINAL CONSIDERATIONS

The article aimed to show the operational dynamics of the National School Feeding Programme (PNAE) in state schools of the city of Santa Maria-RS. In this sense, it can be seen that the most general guidelines that guide the conduct at different levels of implementation of PNAE are checked within the schools analyzed in the research. It was found that in the perception of respondents one of the largest logistical shortcomings of schools is regarding to the lack of proper infrastructure to meet the need of using in natura food for further processing. If these conditions were met, not only the students would have more nutritionally adequate food, but also the other end (the farmers) would have more effective inclusion in the program.

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The Agriculture Strategy of Vorarlberg. Towards a local agri-food system?

Vivien Lunda[1]

***Abstract* – While the Agriculture Strategy of Vorarlberg is presented as best practice example where collective action of bottom-up approaches as well as top-down engagement built a 16 objectives framework towards a sustainable local food system this research analyses the processes of actors´ integration and negotiation for developing as well as realising the strategy. It shows that a more inclusive and integrative form of policy implementation and realisation can support a sustainable local agri-food system.**
***Keywords* – rural governance, public food strategy, local agri-food system, actor participation.**

INTRODUCTION

The revaluation of and return to locality, in the sense of producing and consuming local, generating local value added and gaining "local control over politics and regulation" has become more and more popular (Kloppenburg et al., 2000:182). Localization is seen as counter-hegemony to globalization, local power as opposed to global power enabled by de-centralization. In this respect, rural governance is an important approach towards new agri-food policies where regional and local governments receive greater attention but also greater control over region-specific decisions (Renting and Wiskerke, 2010).

The Agriculture Strategy 2020 "Ökoland Vorarlberg – regional and fair" seeks to actively take responsibility for the region of Vorarlberg (Austria) by identifying measures that are within but not fully dependent on the programmatic orientation of the Austrian agricultural policy which is lacking specific regional foci. The strategy´s objectives are two-fold: in an ecological sense it promotes an environmentally sound, long-term, sustainable agriculture while it acknowledges the importance of the economic perspective for farmers to be able to make a living on the farm. Besides action plans, among others, on improved education and awareness building for as well as on farmers´ role in the region, increased regional self-sufficiency and doubling of organic farms as well as consumers of organic products, greater cooperation with tourism, trade and industrial kitchens is an essential aspect of the strategy. As Morgan and Sonnino (2008) point out (semi-) public sector has the power to influence the food consumption and production patterns through its food procurement strategies and to enhance sus-tainability in terms of more regional employment, short food supply chains, reduced ecological impact, etc.

However, in order to implement effective local food system strategies it is indispensable to take into account local institutional interests, though with consideration of dividing between local institutions that are a great support and are "more successful in promoting democratic, reflexive localist solutions" and institutions that "merely perpetuate local inequalities" (DuPuis and Goodman, 2005:367). Politics should be reflexive and open with not only a small, unrepresentative group of people who decides for everyone where to go, but a broad group of representatives who join in a continuous open process defined by Child (2003) as "politics of respect".

The Agriculture Strategy of Vorarlberg is pre-sented as best practice example where collective action of bottom-up approaches as well as top-down engagement built a 16 objectives framework towards a sustainable local food system. This research analyses the implementation process of the strategy by critically reflecting on the process of actors´ integration as well as the actors´ negotiation process. It particularly highlights the targets of doubling organic farming and increased cooperation with tourism, trade and industrial kitchens.

Research is still ongoing. So far, five semi-structured qualitative interviews with involved actors (representatives from the local government, from working groups of organic farming as well as public procurement, and from farmers´ initiative) have been conducted in the time frame from May to July. Furthermore, secondary data analysis of an evaluation report about the agri-food system of Vorarlberg as forerunner of the Agriculture Strategy as well as other strategy-relevant documents was done.

PRELIMINARY RESULTS

In 2008 the agri-food system of Vorarlberg in consideration of relevant European programmes and legal foundations was evaluated by an external consultant to guide the definition process of the Agriculture Strategy. Different methods (project team workshops, questionnaires at BuraDialoge, i.e. local events with open invitation to everyone interested, online questionnaire as well as survey on train) were used to include the diverse perspectives of various groups of regional actors (i.e. institutional representatives, policy makers, farmers, consumers).

The consumer perspective in terms of the percentage of workers, retirees, housewives and –men, as is described in the evaluation report itself, was not representative and therefore was neglected. Furthermore, while there was a high level of farmers´ participation in the evaluation process, interviewees who were responsible for implementing the Agriculture Strategy state that the evaluation report and its findings were no longer an essential part for the strategy as originally intended. Reasons given were forthcoming strategic projects on European level they didn´t want to come into conflict with. Main driver for the development of the Agriculture Strategy therefore was a project team consisting of representatives from, among others, agrarian district authority, provincial government of Vorarlberg, chamber of agriculture, parliamentary parties' spokesmen for agriculture, organic farming association, farmers´ organisation, agricultural school, rural youth association, nature

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conservation, alpine diaries and dairy cooperative. Most important, as inter-viewees claim, was the systematic integration of political parties in the state parliament (Landtag). While this statement is shared by all interviewed persons, they show conflicting viewpoints on the dimensions of the participation process. Actors who have been integrated in the definition process from the beginning on feel that the strategy reflects diverse opinions of relevant stakeholders: "All actors that existed were mentally part of the strategy, at its implementation as well as realization." However, some departments and institutions felt disregarded in light of measures that according to their view were their expertise – e.g. governmental department of spatial planning as priority zones for the agricultural sector were identified without their knowing and consultation.

Two main targets of the strategy were chosen to be analysed further according to the research objective of actors´ negotiation and integration process: doubling of organic farming and increased cooperation with tourism, trade and industrial kitchens. Survey results from the evaluation report indicate that farmers pointed to the major difficulty of centralised processing. They claim that while producing organic is easy, selling organic is quite difficult. The existing cooperative structure is not future-oriented if organic producing is to be enhanced. This issue was now revived by actors of a working group of the strategy while the people in charge of the implementation and realisation process admit belated reaction.

A similar process applies to the topic of direct marketing opportunities from farmers to larger consumers such as catering and industrial kitchens. In the framework of the Agriculture Strategy various projects were initiated to realise the given goals. A logistics platform was set up in cooperation with the regional marketing association as well as the chamber of commerce to link hoteliers and catering with regional farmers. However, the project currently stagnates and the person in charge recognizes the misapprehension and insufficient communication with actors concerned. He states that hoteliers and catering partners miss a personalised customer service while farmers feel overburdened due to their lack of entrepreneurial skills.

CONCLUSION

The preliminary results so far show that the integration of important actor groups in the agri-food system during the implementation process was insufficient as some decisions made are to be re-evaluated. As Hassanein (2003) demonstrates the positive interaction of actors on different levels is a prerequisite for a successful transformation towards set goals such as a local agri-food system. The development process of the Agriculture Strategy rather refers to a top down approach masquerading as democratic opinion-forming, planning and decision making process. On the other hand, the Agriculture Strategy provides support mechanisms for initiatives that develop on different levels (individual, community, local) within the existing policy framework and hence seeks to acknowledge the importance of bottom-up action in the realisation phase.

In 2017 an interim evaluation of the strategy is planned. Interviewed persons in charge already refer to the need for learning from weaknesses and failures with regard to the implementation process as is described in the section of preliminary results. It will be seen to what extent interactions and therefore joint action is strengthened as well as learning processes and coalition building among the different actors enabled.

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The contribution of local agrifood systems in food policies of cities

Claire Cerdan[1]

***Abstract* – In the current relocation process of food systems, cities are experimenting new local food procurement policies. These experiences are quite different with the previous initiatives of support of agriculture that was conceived and reasoned from a rural area in order to reveal specificities to ensure better integration in the markets and contributed to the development and recognition of what is called the agriculture of terroir or geographical indications. The approach of Local Agri-Food Systems (LAS) is in this perspective and brings, since the late 90s, original contributions to the analysis of rural development by providing a central place to resources, territory and local food cultures [Muchnik et al (2008)]. Public procurement projects networks and programs for school canteens cities refocus the debate on the need to take account of the logic of small businesses and their possible cooperation within a territory and interacting with urban developers of these programs. The paper discuss here on the capacity and the relevance of the LAS approach to meet the food safety requirements and to support local procurement policies of cities and especially school canteens.**

***Keywords* – food procurement, cities, local agrifood system.**

INTRODUCTION

In the current relocation process of food systems, cities are experimenting new local food procurement policies. These experiences are quite different with the previous initiatives of support of agriculture that was conceived and reasoned from a rural area in order to reveal specificities to ensure better integration in the markets and contributed to the development and recognition of what is called the agriculture of terroir or geographical indications. The approach of Localized Food and Agriculture System (SYAL) is in line with this perspective and brings, since the late 90s, original contributions to the analysis of rural development by providing a central place to resources, territory and local food cultures (Muchnik et al, 2008) The originality of the work on SYAL was thus to propose a method of analysis with attention to the enhancement of regional specificities, declined in several dimensions: specificity of men, their histories and institutions, specific ecosystems and landscapes; specificity of the products and related qualification process; specificity of consumers and their food crops that can be used as food resources development (Muchnik et al, 2008). On the other hand, recent public procurement projects networks and programs for school canteens refocus the debate on the need to take account of the logic of small businesses and their possible cooperation within a territory and interacting with urban developers and polices makers. Is the SYAL approach a proposal to examine and to strengthen food policies of cities ? The paper discuss here on the capacity and the relevance of the SYAL approach to meet the food safety requirements and to support local procurement policies of cities and especially school canteens. The paper discuss here on the capacity and the relevance of the SYAL approach to meet the food safety requirements and to support local procurement policies of cities and especially school canteens. We first present the policies and programs specificities and limitations. We will then discuss possible contributions of SYAL approach to the analysis of these new agricultural and rural dynamics in those territories where the city becomes a key player.

METHODS

This paper is based on the analysis of nine communications, which were presented and discussed during the sixth edition International of the Conference on Local Agri-food Systems' in Florianopolis – Brazil (2013). The conference aimed at evaluating how to face the new challenges related to in the global context. In particular profound changes in the current global context demand a new reflection on the role of the LAFS (as well as other approaches) in local development strategies. The issue of food security holds a privileged place in the international organisms' agenda, making room for discussions on the role of family agriculture. Forms of public action are also renewed before these new challenges, and the State or local institutions (collectivities) become increasingly important interlocutors in the promotion of agrifood development strategies in partnership with the private sector and civil society. The selected communications deal with the recent brazilian "Zero Hunger Program", reflecting on its implementation at the municipal level.

RESULTS

New policies and actions for food and Nutrition Security in Brazil

The Zero Hunger Project is the result of one year of work involving experts and representatives of NGOs, research institutes, local organizations and social movements dealing with food security-related issues from all over Brazil who were brought together by the Citizenship Institute to draw up a proposal for a Food and Nutrition Security Policy. This project was based on the local experiences and innovations tested by some cities, municipalities or States. Two of the main initiatives taken for this purpose were the Food Acquisition Program (PAA), a mechanism for public procurement of food produced by family farmers and the National School Meal Program (Pnae), another mechanism to serve meals to students at school. Both of them establish links between the supply of food produced under family farming schemes and demand for food for public programs and facilities. By law 30% of food for public school meals should come from the family farm sector. Some 45.6 million school children are attended by this program which has extended its

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reach to include secondary schooling and other public canteens (Wilkinson et al, 2015).

The selected communications at the 6th syal congress, relate the positive effects and the difficulties that small cities or municipalities are facing when they want to implement such program. Our communication discuss this difficulties and try to reflect if the syal approach can help to better improve the implementation of this type of policies.

The selected communications show that the 2 publics programs could be seen as an important leverage to explore new markets (eg the Sao jaoquim cooperserra) or invest in new agricultural production (conversion to organic production diversification). it also represents an opportunities for small families farmers to convert their production system to more sustainable production (tobacco conversion to agro-ecology). Communications also reveals learning process and integration of family farmers in new spaces of dialogue and territorial mediation. Some limits are pointed out. The volume cap limits the insertion of a greater number of family farmers. And thus limits the effects of these programs at the local level and sometimes create competition between producers organisation to have access to the programs. On other hand, communications expose important administrative and legal barriers (Public Procurement Code) and confirm the current management model is still a model for conventional products without thinking how to manage the seasonality or the freshness of the products? In the same line, there is an important lack of infrastructures of school restaurants in managing and transforming the supply of fresh products (vegetables, salads, fruits). The last element pointed out by the authors is an important lack of producer's organisations, logistical problems as well as the ignorance of family farmers by public actors (not visible, poorly organized).

Local Agrifood System : main charactericitics?

Since 1996, the concept of SYAL is the result of a progressive construction of researchers, scholars and activists interested in studying and understanding the spatial concentration of small and mediumsized food enterprises in Latin America and Africa. The challenge for this group is building an explanatory model of collective efficiency of networks of actors and agrifood enterprises (the role of the territorial anchorage in the economic development). The analyse of the literature done since the end of 90's decades shows three categories of studies. The first focuses on the effect of spatial concentrations of agrifood enterprises. The results and contributions are quite close from clusters, industrial districts literature (Italian districts - Becattini). In this perspective, the concept of Local Agrifood Systems (SYAL), was defined as ''production and service organizations (units of agricultural production, agrifood enterprises, markets and stores, restaurants, services, etc.) that are linked by their characteristics and by their relationship to a specific territory'' (Muchnik 1996, as cited by Muchnik and de Sainte Marie 2010, p. 13). The second category and the most important analyses different qualification process for local products: territorially based products, origin based products (GI). The third group is reflecting on work integrating the SYAL concept into the broader environmental and social challenges faced by rural communities (contribution for territorial development). Those studies also highlight how SYAL can be diverse and get different meaning (a concrete object, an approach and an institutional tool, which can be used into development programs). In sum, the approach in terms of Local Agrifood system is originally an analytical frame for processes of local resources and territorial anchorage construction and renewal. Regarding the literature confirms the relevance of territorial scale and help the identification of the actors and the interactions between the agricultural and non-agricultural sectors (territorial governance). Empirical and theoretical evidences provide a response to the current challenges and going beyond traditional oppositions (local products / productions in international markets; organic / conventional agriculture; Short supply chains / long supply chain). In this perspective the SYAL approach a proposal to examine and to strengthen food policies of cities ?

DISCUSSION CONCLUSION

The Brazilian experience is a good example of a decentralized food policies. This brief overview of the contributions is sufficient to demonstrate the profound shift by a revitalization of commodity production and traditional foodstuffs. At least, What farming models for family farms? Should we promote commodities / or differentiated products with high added value for this kind of agriculture? Who are the key players and what are their room for manoeuvre? the central state, cities. The SYAL seems to represent a promising approach insofar it could help local organisation and municipalities to characterize the specific modes of organization and relationships between supply and demand, thinking family farms and typical products. On the other hand, we think that food policies and the role of cities for sustainable food in the renewal of relations between urban and rural themes open paths and research fronts around SYAL.

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Socio-technical innovation in university procurement of sustainable local food: the role of "infrastructure of the middle" in sustainability transition

Lori Stahlbrand[1]

***Abstract* – This article argues that "infrastructure of the middle" is a key concept that must be highlighted in order to understand food system transformation toward sustainability. It presents preliminary evidence from an analysis of university food procurement initiatives in England and Canada, based on detailed interviews with practitioners. The author herself was a practitioner (as the former leader of a Canadian NGO which promoted university procurement of sustainable local food), and thus brings a perspective informed by praxis, as well as academic theory. "Infrastructure of the middle" refers to the hard and soft infrastructure from warehouses and processing plants to champions and non-profit actors that create a new "nexus of practice" for sustainable local food. It is a term adapted by the author from Kirchenmann et al.'s concept of "agriculture of the middle". This article argues that the concept of "infrastructure of the middle" is crucial because it represents the operationalization of embeddedness in socio-technical systems for sustainable food transitions.**

***Keywords* – university catering, public sector food procurement, "infrastructure of the middle", sustainability transition theory, sustainability, local food**

INTRODUCTION

This article presents new information about important successes in university procurement of sustainable and local food in the UK, and compares these successes to similar efforts in Toronto, Canada. Although scholars have noted a recent flourishing of alternative food projects, networks, businesses and movements which promote more sustainable and local food systems (Blay-Palmer et al., 2013; Goodman & DuPuis, 2011; Morgan et al.,2006; Mount, 2011), the increased attention to institutional food procurement in general, and university food procurement in particular, is important at this juncture because it presents an opportunity for scaling up the volume of sustainable and local food across the food system (Friedmann, 2007; Morgan, 2008; Morgan & Morley, 2014; Morgan & Sonnino, 2008; Roberts et al. 2014), as well as modelling good food practices for future generations. The article focuses on two specific approaches to increasing procurement of sustainable and local food in universities – the Food For Life Catering Mark in England developed by the Soil Association and Local Food Plus certification in Canada.

Both of these non-profit organizations are examples of "infrastructure of the middle". This is a term I adapted from Kirschenmann et al.'s concept of "agriculture of the middle", which describes the mid-size farms and ranches most under threat from an increasingly globalized food system (Kirschenmann et al., 2008). I coined the term "infrastructure of the middle" to identify the same balance in hard and soft infrastructure, from roads, warehouses and processing plants to individual champions, non-profit actors and institutional habits that create a new "nexus of practice" for sustainable local food. This nexus of practice has the potential to connect mid-size farmers and processors to public institutions that place high-volume orders, a market from which they have been largely excluded. In effect, "infrastructure of the middle" encompasses the moving parts of a socio-technical system required for food system transformation.

METHODOLOGY

The article is based on more than 55 interviews conducted in both England and Canada between 2013 and 2015. Interviewees in England included staff at the Soil Association responsible for developing and administering the Food For Life Catering Mark, food service personnel at two universities which are using the Catering Mark, as well as farmers, processors and distributors supplying these universities. A similar set of interviews was conducted in Canada with staff at the University of Toronto and its food suppliers, as well as staff at the non-profit Local Food Plus. The author of this article is the founder and former President of Local Food Plus, and thus brings a perspective informed by praxis, as well as academic theory.

FINDINGS

Preliminary analysis of data points to the central role of "infrastructure of the middle", in particular the civil society organizations that act as catalysts, facilitators, and relationship-builders. In England, the Food For Life Catering Mark was initially developed to support the work of the Food For Life Partnership, a 15-year-old program designed to transform food culture in British schools. The Catering Mark was launched to provide third party certification for caterers in order to ensure that food procurement was meeting the goals of increasingly sustainable and healthy food, as well as to provide a ladder for improvement. Today more than 1.2 million certified meals are served each day, and the program has spread beyond schools to include hospitals, nurseries, care homes, workplaces and universities, the focus of this study.

The Local Food Plus program is significantly less developed. Yet at its launch in 2006, it represented the first time that at a major Canadian university had made a commitment to purchase sustainable and local food, as a percentage of food purchased for specific

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residence cafeterias. Unlike the Catering Mark, Local Food Plus certification was for farmers and processors to encourage them to move toward more sustainable practices.

Both programs represent a deliberate attempt to shift responsibility for sustainability transition in the food system away from being solely dependent on individual consumer purchases. For the universities involved, it was re-iterated in several interviews that certifications helped them set goals, and keep abreast of trends around sustainable food procurement. For the local farmers, processors and distributors who supply these universities, the certifications encouraged them to adopt more sustainable practices or source more local food in order to gain and hold contracts to supply the universities.

CONCLUSIONS

The tiny word "to" in such popular slogans as "Farm to Table", "Field to Fork" and "Farm to School" reveals a profound underappreciation of the long distances and huge obstacles between farm and table. As a consequence of this pervasive misunderstanding, there has as yet been little scholarly or public discourse on the subject of processing, distribution and foodservice infrastructure. My thesis is designed to overcome this legacy.

The Food For Life Catering Mark, Local Food Plus certification, the universities, and the local farmers, processors, aggregators, distributors, and promoters together form the socio-technical system that allows the sustainability transition to happen. However, interviewees said time and again that the system is still fragile and largely dependent on champions.

Preliminary analysis of the data indicates that civil society organizations can spearhead the transition if they are well-funded over a period of time. For the new socio-technical systems to be embedded, however, government must play a policy role that supports the adoption of more sustainable practices. Otherwise they remain marginalized programs.

In addition, early analysis suggests that the missing link in scaling up sustainable and local food systems is not the inability of farmers to produce food, but the weakness of the connective tissue – the processors, distributors, aggregators, connectors,advocates, marketers and foodservice companies – to manage the sustainability transition. This is becoming the emerging challenge for sustainability advocates and analysts.

This article argues that the concept of "infrastructure of the middle" is crucial because it embeds public sector food procurement in local society, nature, and economies. Indeed, "infrastructure of the middle" may represent the operationalization of embeddedness in socio-technical systems for sustainable food transitions.

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The Urban Agriculture conquering the school food institutional market in Belo Horizonte/MG/BR: The Productive Garden experience in the period 2010-2015

Ivana Cristina Lovo, Luzia Falcão, José Divino Lopes[1]

***Abstract* – The "From Seed to Table (FStT)" project sponsored by RUAF Foundation, was deployed in Brazil only at Belo Horizonte city, Minas Gerais State. His goal was to make possible the generation of in-come groups "self managed" consisting of low-income families from the sale of healthy vegetables produced in Urban Agriculture iniciatives called "Productive Gardens". The methodology that was considered followed the prospect of action research, encompass-ing technical and organizational. The FStT worked creating basic conditions for low-income families linked to community gardens located in public areas so they make economically viable activity with a focus on self-management. The originality of the results is in the institutional sales to local schools that started to buy food produced by the "Productive Gardens" for school meals. This experience was certified as a So-cial Technology by Bank of Brazil Foundation.**

***Keywords* – Productive Gardens, Social Technology, institutional sales to local schools**

INTRODUCTION

The experience that contribute to conceptualiza-ton of urban and peri-urban agriculture (UPA) demonstrate the diversity of possible dimen-sions of being interrelated from agricultur-al practices in urban and peri-urban spaces. In this context, it is reported to the social dimen-sion, with emphasis on the promotion of food securi-ty and nutritional sovereignty, cultural, territori-al, environmental, economic, among others, as dis-cussed in Mougeot (2005 p.5) e Cabannes (2012 p.8, 11 e 12).

The importance of the UPA to promote nutritional food food security in the cities brings to the Brazilian reality the priority of governmental actions promot-ing the UPA with social policies. In this con-text, the economic dimension is considered from the indirect household income which is accounted by savings resulting from direct access to cultivated foods, avoiding the purchase of them, as demon-strated in project developed in the State of Minas Gerais, Brazil (LOVO et al., 2012, p. 8).

NUGENT (2000, p.70) analyzes the economic di-mension of the UPA and emphasizes the informal character the UPA and emphasizes the informal character of small scale agriculture, intra ur-ban and the major contribution of agriculture in peri-urban areas in terms of income in the econo-my injection. MOUSTIER & DANSO(2006, p. 176) bring a typology on socio economic profiles of UPA indicating the focus on income genera-tion activities located in peri-urban areas.

This article presents the results of the Pro-ject From Seed to Table (FStT), promoted by the Ruaf Foundation during the period from Febru-ary February 2009 to June 2011 in 20 pilot cities around the world. Belo Horizonte was chosen as one of the pilot cities, considering that from 2005 to 2008, the city participated in the diagnosis and participatory planning of local polices of Urban Agriculture (UA) through the pro-gram Cities Farming the Future (CFF), promoted globally by the same institution.

To Belo Horizonte the question of FStT was: what are the possibilities to market the products of urban agriculture and to achieve from that a financial re-turn to influence positively on the living conditions of the families of farmers? That question has prompt-ed the possibility that the use of urban agricul-ture generates direct income for the families that take agriculture in intra urban spaces as an econom-ic activity. The aim of this work is to promote the promote the marketing experience with public school in Belo Horizonte, starting in 2010 whit the FStT project.

METODOLOGY

The Productive Garden (PG) was implemented in 2008, in the context of the CFF, in an area of 3500 m2 considered as a useless public space, located at Rua W5, close to housing estate Urucu-ia/Neighborhood Cardoso/Regional Barreiro/Belo HorizoteMinas Gerais, Brazil.

The FStT project enabled the technical monitor-ing of the farmers group in the period of Febru-ary 2009 to June 2011. At this time there were six farmers (two women and four men) and currently, June/2015, there are nine farmers (four wom-en and five men) representing eight families.

The methodological strategy used for monitoring of groups was based on the research action, that, ac-cording to GHEDIN & FRANCO (2011, p. 235-236), it is an investigative process based on participation and collaboration between research-ers and participants, having a research approach with social feature, that associates planning strate gies and local action, in a dialectical process of change of reality.

The basis of the work were the building of strength and capacity of the group as basic conditions for the families involved to be able to ensure economically the activity of urban agriculture, from a selfmanagement approach.

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A participatory business plan was prepared from technical and organizational training to marketing. The training of farmers was held through weekly visits, from technical assistance (a surveyor and popular educator) who introduce the Group productive innovations in practical activities called "field Schools" (learning by doing).

The business plan drawn up by participative help, elected priority products to production and marketing: the lettuce (Lactuca stiva), chives (Allium fistolosum), cabbage (Brassica oleracea) and the parsley (Petrosolium sativu).

Marketing results are presented from the data contained in the final report of the FStT-Belo Horizonte, according to Jota et al. (2011), and from the invoices from the period of April 2010 to May 2015, issued from trading with the municipal schools.

RESULTS

Institutional marketing was initially made possible from an agreement made with directors of municipal public schools located near the PG. To facilitate the institutionalization of commercialization, in which it was required to issue receipts, a farmer of the group, Luzia Falcão, registered as a individual micro-entrepreneur[2]. That farmer went on to have national registry of legal entities (CNPJ), current account in Bank and initiated the payment of her contribution to social security through the National Social Security Institute (INSS). In table 1 and 2 are presented marketing data.

Table I: Income generated with formal and informal trading in the period from April to September/2010.

Enterprise	Number of comercialized unities*		Income generat-ed with the market-ing (U$)		Total income generated (U$)**
Schools	Others		Schools		Others
Jardim Produtivo	2.276	4.577	696,61	1292,42	1989,03

* It refers to the marketable portion of the cultivated vegetables. ** Exchange value converting June/2015 U3.10.

Table II: Info on the Garden Productive marketing with schools in the period April/2010 to May 2015.

Ano	Nº attended schools	Nº months of sales	Sold unities	Value of sale U$*
2010	3	6	2276	696,61
2011	6	7	5287	1705,48
2012	4	8	3018	1264,10
2013	6	11	5374	1754,81
2014	4	11	2652	877,89
2015*	3	3	852	320,78

*Exchange value used in converting June/2015=U$3.10

Institutional marketing meets on average of four schools, the ones closest to the Productive Garden, covering units of early childhood education and elementary education. The four schools meet 1905 children and adolescents that benefit from school meals.

As it indicates in table 1, the institutional marketing shows itself as a complement to the informal trading with the neighbourhood by the direct demand of vegetables in the JP or through the delivery of baskets ordered to farmers.

CONCLUSIONS

By marketing records presented here, the authors indicate an overcoming of the expectations of urban agriculture as an activity promoting of food and nutritional security through only for subsistence production.

The formalization of the farmer as a microentrepreneur paved the way for the sale of production for the National School Feeding Program (PNAE), which aims to increase consumption of vegetables among students of public schools in Brazil.

The initial results of the project led to the garden experience FStT Productive be certified as a Social Technology[3] by Banco do Brazil Foundation in 2011.

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[2] According to the Federal Supplementary Law 128/2008, the Individual Micro-entrepreneur is the one with gross revenue of U$ 11613,00 opting for National Simple, no participation in another company as a partner or holder and no more than one contract employee who receives the minimum wage or the floor of the category.

[3] A Social Technology, according to the Banco do Brazil Foundation, is defined as products, techniques, or replicable methodologies developed through the interaction with the community and that represent effective solutions of social transformation.

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Evaluation of the ecuadorian school feeding program as a promoting

Annelise Krause and Sergio Schneider[1]

Abstract **– Ecuador is going through a nutritional transition with significant increase in the prevalence of overweight and obesity in the population, especially among children and young people, although undernutrition rates in the country are still very high. The country has great ethnic, cultural and food diversity, however, the introduction of ultra processed food in the Ecuadorian diet has provided changes in habits and nutritional profile of the population. Among the existing government programs whose purpose is to reduce malnutrition among children and youth is the School Feeding Program – Programa de Alimentación Escolar - PAE. The objective of this study was to reflect on the possible influences of the School Feeding Program - PAE – on these changes in the nutritional profile and its future possibilities. 24 hours Food Recall surveys, focus groups, and food security scale were applied to collect empirical data information about the acceptance of food of the governmental program. It was observed that household food habit is still linked to the culture of local foods. On the other hand, the products offered by PAE do not reflect the culturally established eating habits. This condition could contribute - together with other policies to promote healthy eating – for the stagnation of nutritional transition and appreciation of local agricultural production.**

Keywords **– food policy, school feeding program, nutrition**

INTRODUCTION

Ecuador presents a rich ethnic, cultural and food diversity. However, the introduction of ultra processed food in the Ecuadorian diet has led to changes in both eating habits and nutritional profile of the population. The country is experiencing a nutritional transition, showing increasing prevalence of overweight and obesity especially among children and young people, in spite of malnutrition rates being still very high (Moya, 2010a, 2010b, 2010c).

The most serious situation regarding the nutritional status of the Ecuadorian population is the height deficit in children under five years, which reaches 25% and, considering just the indigenous population, it is as high as 42.3%. On the other side, overweight and obesity figures are also disturbing. If, on the one hand, there has been some improvements in the height deficit, overweight rates among children under five have doubled between 1986 and 2014, and among children aged between 5 and 11 it reaches 29.9% showing growing trends throughout adult life (Freie et al,, 2013).

Among existing governmental programs aimed at providing food and reducing malnutrition among children and young people, there is the School Feeding Program – PAE. Established in Ecuador since the 1990s, PAE was created under the auspices of the UN World Food Programme (WFP). The objective of the present study was to reflect upon possible influences of the School Feeding Program (PAE) on both the changes in nutritional profile of the population and its possibilities for the future (Barona, 2014).

METHOD

Data collection was based on a 24 hours Food Record survey applied to a sample consisting of mothers of children who have meals at school. The objective was identifying the diet and comparing it with the menu offered by PAE. A Latin American and Caribbean Food Security scale was applied for assessing food insecurity (Organización de las Naciones Unidas para la Alimentación y la Agricultura, 2012). Children and their mothers had their height and weight measured.

Also focal groups were conducted aiming to get information on the acceptance of food provided by the governmental program.

RESULTS

A relation was observed between overweight of the child and the body mass index (BMI) of the mother, suggesting that a higher BMI of the mother is associated with a greater chance for the child to experience overweight. Such association reveals how inadequate food consumption habits of mothers are transmitted to the children affecting their nutritional status. Furthermore, a significant correlation was observed between chronic malnutrition and food insecurity, that is, the higher is the level of food insecurity, the greater will be the chance for children to undergo malnutrition.

Results show that only 1 out of 5 children present a secure food status; the other four belong to families that present some degree of food insecurity. Approximately 2 out of five children (41%) undergo mild food insecurity, 1 (21%) experiences moderate food insecurity, and 1 (17%) experiences severe food insecurity.

As to eating habits, it was possible to observe that families still consume preferably local food, prevailing a great variety of regional fruits and vegetables, associated to the various ethnic groups existing in the country.

On the other hand, the PAE in Ecuador offers a total of five food products to be combined during school week, which are distributed to the whole country and are highly processed.

The breakfast daily provided to rural students is composed by three food products: the colada (corn meal) and other two that are alternate – granola or cereal bar and sweet or salt biscuits. In the case of urban schools, it is provided milk, either plain or flavored.

Regarding the preference of students for school meals, the study revealed that the products most accepted by students are those containing high levels

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of sugar – sweet biscuits and chocolate flavored milk – and the rejection occurs more frequently in regions were the indigenous or agricultural culture is predominant, as in the rural Amazonian region. Teachers and parents trust the program as a nutrients source for children, but complain for the food products do not comply with local habits, as when it offers salt meal at the breakfast in the Mountains region or does not use local products in the East (Amazonian region).

DISCUSSION

Through the point of view of cultural pertinence, the Ecuadorian situation seems to be quite worrisome, since most of the products offered through PAE at school meals do not make part of the regular diet of school children, nor of their food culture (Schneider, Krause, 2014). This situation is particularly worrisome in regions where there is a prevalence of chronic malnutrition simultaneously with growing overweight rates. That is: food to which people have access, including school meals, are not healthy.

CONCLUSION

The study of the diet characteristics of school children in Ecuador and its comparison with the menu offered in school meals showed that the products offered by the School Feeding Program in the country do not reflect the culturally established eating habits, and could be replaced by locally produced food products that are regularly consumed by the population.

In this perspective, there are documents available such as the Ecuadorian Food Atlas of Indigenous and Afro-Ecuadoran People (ATLAS), which offers a description of the natural wealth of the country and that could guide the acknowledgement of the diverse eating culture of the Ecuadorian people.

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WG25 - Postharvest aspects of local food supply chains of urban centres

Local food systems are essential contributors to food and nutrition security in urban centres, as well as to the overall growth of city-region economies. However, significant opportunities exist to improve the environmental sustainability and social inclusion characteristics of such food systems.
In industrialized economies, local food supply chains ("local" commonly refers to food produced by or sourced from nearby farms and producers, yet the structure of these supply chains can take numerous forms) have recently re-emerged as an alternative to conventional food systems (e.g. based on economies of scale). The supply chains of urban food systems in developing countries vary by location, commodity and consumer. In many urban centres food is sourced within the country and then traded and transported through a fairly informal but often well-organised chain to urban centres. In some locations some types of food (usually staple commodities) may also have to be imported from other countries during some periods of the year or in response to poor harvests or civil disturbance. However, in all these situations, the postharvest aspects of the value chain are important for ensuring the functioning, quality and sustainability of the food supply chain. Urban food systems in many rapidly urbanising developing countries are becoming increasingly dynamic, and postharvest activities (e.g. transformation into innovative processed food) are playing an increasingly important role.

This working group aims to explore the diverse postharvest elements of local urban food systems, focusing on what is of interest for developing countries. Contributions to this working group may be in the form of study reports, empirical analyses, descriptions of innovative arrangements, or theories, targeting areas related to, but not limited to, the following topics:

- *Analysis of the postharvest systems of an urban local food supply chain*
- *Environmental sustainability of postharvest stages (e.g. energy, water and other input use in packing, processing, storing, transporting, marketing) of an urban local food supply chain*
- *Transferring the true "environmental cost" of food through postharvest means (e.g. labelling, pricing).*
- *Social sustainability aspects of the postharvest stages of urban food supply chains (e.g. equitable profit distribution among value chain actors, working conditions in postharvest operations)*
- *Unpacking the complexity of food quality (including food safety) perceptions among different consumers and its effect on the postharvest stages of local food systems*
- *Innovative certification systems influencing postharvest stages of urban food supply chains*
- *Influence of consumers' needs and demands on postharvest practices within the urban food supply chains*
- *Challenges associated with, and for, small local producers and informal markets in urban food systems*
- *Reducing postharvest food losses to improve the social, economic and environmental sustainability of urban food systems*
- *Contribution of social innovations for overcoming postharvest constraints in urban food supply chains*
- *Exploiting comparative advantages of postharvest characteristics of local food value chains.*

Convenors:
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Reducing Postharvest Produce Losses through the Implementation of High Tunnel Systems

Eleni D. Pliakoni, Michael N. Ryan, Helena Pontes Chiebao, Lani J. Meyer and Cary L. Rivard[1]

Abstract **– The implementation of high tunnels for vegetable production has rapidly expanded in the United States due. However, little is known about the effect of high tunnel production systems on postharvest losses or nutritional and physical quality of fresh produce at harvest and during storage. The aim of this work was to determine how high tunnel production affects postharvest losses, quality and shelf life of organically-grown tomatoes and spinach compared to the open-field. Tomatoes were harvested at the pink maturity stage based on the USDA color/maturity classification map and stored at 12.5oC and 25oC for 21 days. Fruit samples were evaluated at days 0, 5 and 10 for physical and nutritional quality. Fully mature spinach leaves was harvested and stored at 3oC and 13oC for 6 days. Tomatoes grown in the high tunnel had significantly lower respiration rates compared to open-field in 2013, but there was no effect in 2014. Furthermore, high tunnel tomatoes showed reduced incidence and severity of postharvest disease in 2013, but there was no effect on decay in 2014. The utilization of high tunnels for vegetable production by local growers could lead to the reduction of food losses by extension of postharvest shelf life.**

Keywords **– shelf life, quality, high tunnels, hoop houses, season extension, tomatoes, spinach, organic**

INTRODUCTION

The implementation of high tunnels for vegetable production has rapidly expanded in the United States due to various reasons including the expansion of organic and local markets.High tunnels have also been found to extend the growing season, both early and late (Carey, 2009), as well as help growers maintain their planting and harvesting schedules with less weather-related impact(Lamont, 2003). However, little is know about the effect of high tunnel production systems on postharvest loss, quality and shelf life of organically-grown tomatoes and spinach as compared to open-fieldproduction.The objective of this work was to explore the effects of the two production systems (high tunnel vs. open-field) on the postharvest losses of spinach (Spinaciaoleracea) and tomato (Solanumlycopersicum).

MATERIALS AND METHODS

These trials took place at the Kansas State University Olathe Horticulture Research and Extension Center during 2013-2015. Two tomato types (hybrid red cv. BHN-589 and heirloom cv. Cherokee Purple) were tested and one spinach type (cv. Corvair) were grown.In Kansas, tomatoes are typically planted in the high tunnel during early April and in the open-field in early May. Our trials followed a similar planting schedule. Typical commercial practices were used for both high tunnel and open-field plots. To-matoes were harvested from July to October. In order to assess postharvest losses, fruit at the pink maturity stage based on the USDA color/maturity classification map were sampled from the harvest and stored at 12.5oC and 25oC for 21 days. Fruit respiration rate was measured every 24 hours during storage. Color (CIE L*a*b*)and firmness was measured daily as well.Fruit samples were evaluated at days: zero, five and 10 for physical and nutritional quality.

Spinach trials were conducted in the fall/winter and are typically planted in September and har-vested from November to April. Leaves were harvested every 14 days during cold weather periods and every 7 days February-April. In order to assess postharvest losses, fully mature spinach leaves were harvested and stored at 3oC and 13oC for 12 days. Rates of respiration, and color were monitored in the same manner as tomato fruit. Texture data was recorded using the same texture analyser listed above.

RESULTS

Figures 1-2 show the results from the 2013 tomato trial. Data in figure 1 indicate that the respiration rates of tomatoes grown in the high tunnel were lower compared to the open-field. Similarly, figure 2 shows that the severity of stemphyllium fruit rot in storage was lower among fruit grown in the high tunnel. Furthermore, AUDPC values were calculated and were significantly lower among the high tunnel treatment ($P<0.05$). Both of these data sets suggest that the shelf life of tomato fruit grown in the high tunnel was longer than the ones grown in the open-field. In 2014, however, a different trend was seen (Fig 3). There were no significant differences found at either storage temperature. Figures 4-5 show the respiration and decay rates of spinach grown in the high tunnel and open-field, respectively, during storage. It is also worth noting that samples stored at the proper temperature (3c) had longer shelf life than those stored at ambient temperature (Fig 5).The spinach grown in the high tunnel maintained higher quality for two days longer than the open field sampleswhen stored at 3c (Fig 5).

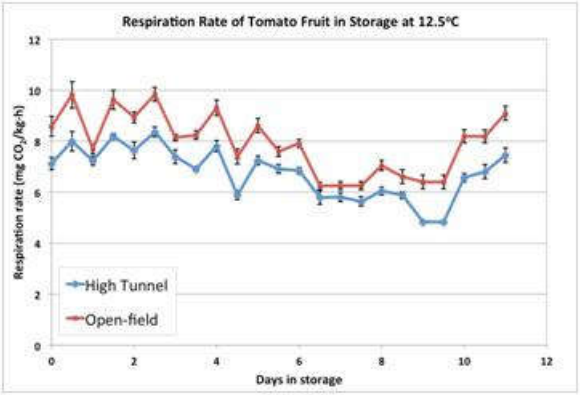

Figure 1. Respiration of tomatoes grown in the high tunnel and the open field at OHREC in 2013.

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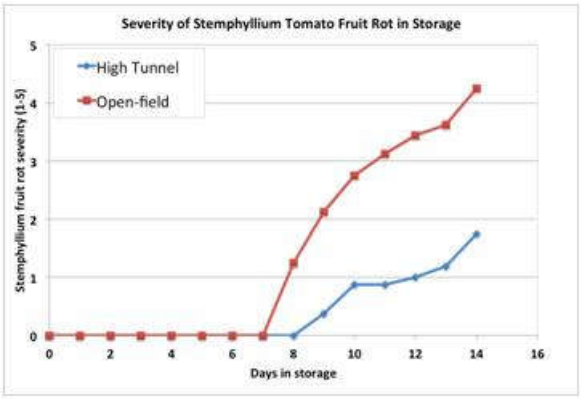

Figure 2. Severity of stemphyllium tomato fruit rot of tomatoes grown in the high tunnel andthe open-field at OHREC in 2013.

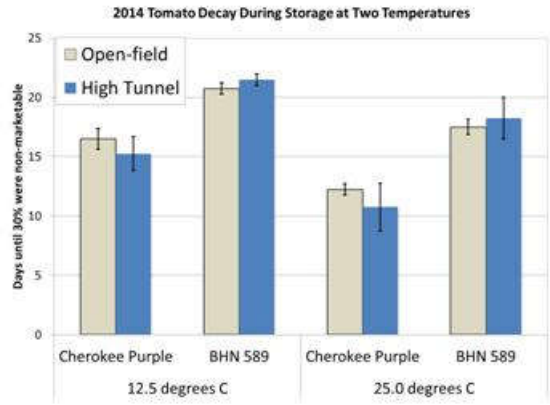

Figure 3. Shelf life of commercial red ('BHN 589') and heirloom ('Cherokee Purple') type tomatoes grown in high tunnels and the open-field in 2014. Tomato fruit were stored at two temperatures.

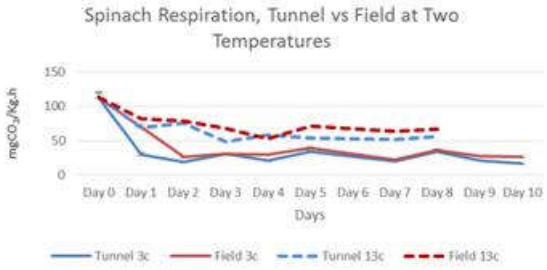

Figure 4.Respiration of spinach grown in the high tunnel and open-field in 2014. Samples were stored at two temperatures

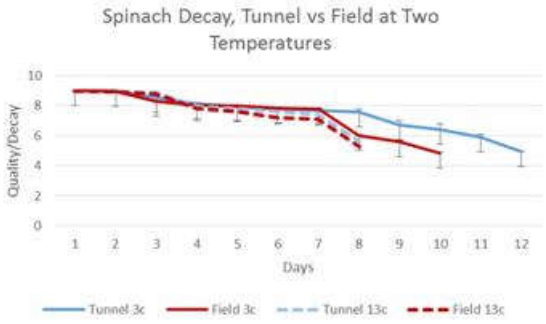

Figure 5.Visual assessment spinach postharvest decay whengrown in the high tunnel and the open-field and stored at two temperatures.

Discussion

Based on our results thus far, the effect of high tunnel production on the shelf life and quality of tomatoes is not consistent. In 2013, tomato fruit grown in the high tunnel had longer shelf life than those grown in the open-field, but there were no differences in 2014. Data from 2014 indicate that there is no statistically significant difference between spinach grown in the tunnel compared to the open-field. In the case of the two crops, it is important to note that the difference between the two microclimates (high tunnel vs. open-field) is not consistent across growing seasons and/or crops. For example, in the summer time, plants may be more stressed due to higher temperatures in the high tunnel whereas during the fall/winter, the higher temperatures may be a benefit to the crop. Therefore, it seems likely that the effect the system has on shelf life is most likely dependent on the environment and suitability of the crop to that particular climate. The ability to add several extra days of marketability could make a significant impact for many small-acreage vegetable producers, particularly those without cooling infrastructure that is capable of maintaining optimal storage temperatures.Clearly, further research is needed to determine if these trends are consistent across multiple growing seasons and crops.

Acknowledgement

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Minor horticultural crop diffusion through minimal processing

Francisca A. Ansah, Mulugheta T. Solomon, Maria Luisa Amodio and Giancarlo Colelli[1]

Abstract **– Minor horticultural crops, which were fading out of food supply chain are now being re-considered due to their high nutritional properties and emerging consumer interest. Minimal processing and modified atmosphere packaging present techniques to add value to these crops for enhanced transport, distribution and consumption; hence the competitiveness of local growers. This was revealed through an evaluation on zucchini male flowers, fennel, broccoli raab and purslane leaves stored at 5°C. In zucchini flowers, a comparison of four different atmospheres ($3\%O_2+97\%N_2$, $3\%O_2+10\%CO_2$ in nitrogen, $10\%CO_2$ in air and air) showed that an atmosphere condition of $3\%O_2$ preserved all quality and marketable characteristics even after 9 days. Similarly, modified atmosphere storage of $5\%O_2+10\%CO_2$ with 0.5% ethanol treatment provided the best anti-browning effect on cut surface of fennels. Optimum sensorial and flavor scores were attained in broccoli raab, stored in polypropylene/polyamide micro-perforated bags with 5g of CO_2 absorbers for 8 days. Regarding purslane leaves, physiological assessment of the presence of ethylene showed that leaves were marketable after 10 days and even 13days at 0°C . This work adds to the efforts towards developing strategies to enhance the utilisation and consumption of fresh minor crops.**

Keywords **– minor crops, minimal processing, consumption.**

INTRODUCTION

Minor horticultural crops, also referred to as traditional, underutilised, or crop wild relatives, are defined as those crops which are used to a limited extent, compared to "major crops" which are extensively used and consumed worldwide and are considered economically relevant. A growing interest in these crops stems from a variety of concerns and needs; including their contribution to agricultural diversification, better use of marginal land in changing environments, food security and a more balanced diet, self-reliance of agricultural systems, additional source of income to farmers and employment opportunities (Padulosi, 1999). Though positive, one significant limitation is that like all other minor vegetables are highly perishable. Several efforts are being made to protect their genetic resources, but very little has been done on maintaining its postharvest quality, distribution and marketability. Minimal processing and packaging technologies would enhance quality, while ensuring their diffusion. According to ibis world (2015), minimal or fresh-cut processing is becoming an important sector around the globe. Hence, the aim of our work was to gather information on optimum temperature and modified atmosphere gas packaging to preserve the quality of four minimally processed minor crops, typically grown in the 'Puglia' region; zucchini male flowers (*Cucurbita pepo* L.) , fennels (*Foeniculum vulgaris* MILL), broccoli raab (*Brassica rapa* L.) and purslane leaves (*Portulaca oleracea* L.).

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METHODS

All products were harvested from commercial farms in Puglia at the different times, accurately sorted for quality products and minimally processed at the Postharvest laboratory of the University of Foggia. **Zucchini** flowers (150 g) were stored at 5 °C in controlled atmosphere with air (as a control), 3% O_2 in nitrogen (low O_2), 10% CO_2 in air (high CO_2) and 3% O_2 + 10% CO_2 in nitrogen (mix). Samples were taken for quality determinations at initial, 2, 5 and 9 days of storage at 5 °C. **Fennels** quarters, after trimming, cutting and washing were immersed for 2 minutes in 0.5% ethanol solution, dried and stored at 5 °C in controlled atmosphere with air (as control), 5% O_2 in nitrogen, 10% CO_2 in air, and 5% O_2 + 10% CO_2 in nitrogen. **Broccoli raab** florets (100 g) were packaged in 5% O_2 in nitrogen in two bags (22 x 32cm) of polypropylene/polyethylene terephthalate, PP/PET,65µm and polypropylene/polyamide, PP/PA micro perforated (MF), 67 µm. The atmosphere in the bags were further treated with and without the inclusion of 5g sachets of CO_2 absorbers (Oxyfree, Tianhua Tech Co., Ltd. China). Triplicates of both film bags were stored at 5 °C. Quality assessments were made at initial, 3 and 8 days. **Purslane** leaves (25 g each replicate) were stored at 3 temperatures (0, 5 and 10°C) for 17 days. Quality assessment were made at initial, 3, 7, 10, 14, and 17 days of storage

Quality Analysis; Overall appearance, odour and flavour evaluation; Samples were scored using a 5 to 1 subjective scale of pictures; 5 = excellent, no defects; 4 = very good, minor defects; 3 = fair, moderate defects, limit of marketability; 2 = poor, major defects, limit of edibility; and 1 = inedible.

Browning incidence of fennel; determined on the core and on each side of the slices, using the scale: 1=no browning; 2=moderate browning; 3=severe browning.

Respiration rate ($mgCO_2/kg/h$) was measured using a dynamic system (Kader, 1992).

Ethylene production was measured using a closed system (Kader, 1992).

Weight loss was determined as percent variation of the initial weight.

Statistical Analysis; A two-way ANOVA analysis were performed and standard deviation was calculated for data on each storage evaluation.

RESULTS

Zucchini flowers: Flowers stored in 3% O2 CO2 retained the highest appearance score, with only a

slight weight loss during the storage compared to other treatments. Green colour component were lost in flowers stored in air, but no off-odours were perceived, in all treatments even though analysis of aroma was not performed (data not shown). **Fennel**: Quarters stored in high-CO2 showed the least core and slice browning incidence below score 2 for 12days at 5°C. Controlled atmosphere with 5% O2 + 10% CO2 resulted the most effective in maintaining the initial quality of fresh-cut fennel stored 12 days at 5 °C (Fig. 1). **Broccoli raab**: Samples stored in PP/PA MF closed with 5% O2, with CO2 absorbers showed the highest scores for flavour and odour while samples stored in PP/PET in 5%O2 with and without CO2 absorbers showed the worst reaching a final score below the minimum of edibility (Table 1). **Purslane leaves**: Results showed signi cantly higher respiration rate with increasing temperature. Leaves stored at 10oC showed the highest CO2 production at 69.1 mgCO2/kg/h, followed by 40.0 mgCO2/kg/h at 5oC and 20.0mgCO2/kg/h at 0oC during the initial storage period, after which, CO2 production decreased till the end of storage. Purslane leaves produced very little amount of ethylene, which was not detected at the start of the experiment until 3 days of storage at 5 and 10 C (0.30 and 0.35 nLC2H4/kg/h, respectively) and 7days of storage at 0oC (0.21 nLC2H4/kg/h).We also observed that at 0oC purslane leaves were scored marketable until 13 days of storage. In samples held at 5 C, scores were intermediate, remaining marketable even on day 10 whiles at 10oC they were scored below the limit of marketability (score3) after 9 days of storage (data not shown)

Table 1. Effect of active (5%O2 in nitrogen) packaging treatment on fresh-cut Broccoli raab

Packaging treatment	Odour score	Flavour score
Control	3.7ab	3.0bcd
PP/PA MF (absorber)	5.0a	4.0ab
PP/PA MF (without absorber)	4.0ab	4.2a
PP/PET-(absorber)	2.5bc	2.0de
PP/PET-(without absorber)	2.0c	1.7e

*Values followed by the same letter are not significantly different.

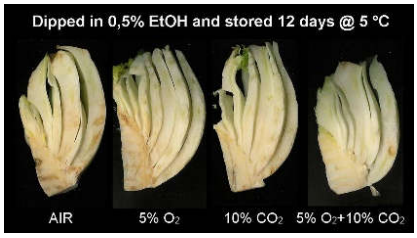

Figure 1. Visual quality of fresh-cut fennels after 12 days

DISCUSSION

Experimental results gave good preliminary information on the effect of gas composition, packaging and temperature on postharvest behavior of 4 minor crops of the 'Puglia' region. For **Broccoli raab**, based on previous studies, a packaging could be designed in order to maintain quality and prevent off-flavor development. The bags of PP/PA MF with and without CO2 absorbers reached an equilibrium an atmosphere of 5%O2 and 4.4%CO2 and 5%O2 and 9.25% CO2 respectively, which were the most effective for the storage of this crop. On **zucchini flowers** and **cut-fennels**, where no information on physiological response to gas level were available, the effect of controlled atmosphere with different gas composition was tested and obtained results will be useful for the further design of a packaging for these crops. Finally for **Purslane**, a very unknown product, infomation on the response to the storage temperature were collected with the aim to investigate the product shelf-life based on temperature and the eventual sensitivity to low temperatures. Storage temperature had significant effect on respiration, ethylene production and marketability of purslane leaves as quality preservation is temperature dependent (Able et al. 2005) and was increased at low temperature, without showing any symptom of chilling sensitivity.

CONCLUSION

The design of appropriate packaging and modified atmosphere storage of minimally processed minor horticultural crops can enhance their distribution and consumption.

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Cooperative products in short food supply chains: the case study of milk in Greece

Stavriani Koutsou, Panagiota Sergaki, Kyriakos Katsaros[1]

***Abstract* – Short food supply chains consists an alternative to long food chains and offer an important route for cooperatives to improve their competitive position in the market. However, Greek consumers are not familiar with such innovative supply chains. Therefore, it is interesting to investigate the economic and social motives that influence consumers' purchasing preferences for cooperative products via a short food supply chain as well as the benefits that rise from the existence of competitive short supply chains. Finally, it was investigated how much the "cooperative" brand is appreciated by the consumers in a very concentrated food sector (milk industry). Empirical research was realized with the help of a structured questionnaire in 489 Greek consumers during the 2015.**

***Keywords* – short food supply chains, agricultural cooperative, Greece.**

INTRODUCTION

Several innovative types of food supply chains have emerged the last years in order to smooth economic inequalities among players in the global market. Short food supply chains (SFSCs) are chains in which the geographical distance and/or the number of intermediates is reduced in relation with a conventional food supply chain with farmers, cooperatives, manufacturers, wholesalers, retailers and consumers (Blanquart et al., 2010; Parker, 2005). They describe a broad range of food production-distribution- consumption configurations, such as farmers' markets, farm shops, collective farmers' shops and community-supported agriculture. They contribute to food and nutrition security in urban centres, to the environmental sustainability as well as to the overall growth of city-region economies. According to Lamine (2005) and Wittman et al. (2008), the SFSCs are perceived for the consumers as "re-establishing authenticity in production and consumption".

These movements have two aspects: firstly they refer to the role of producers and of these networks for the sustainable rural development; secondly they refer to the role of consumers and of these networks for sustainable consumption. They also emphasize on the role of consumers who are transformed from passive followers to leaders in the restructuring of the food supply systems, serving simultaneously the "food democracy". According to Renting (2012), "a considerable part of the contemporary dynamics in agri-food systems seems to be rooted in civil society-based initiatives" (p.291).

While in Europe and in the USA alternative forms of organization of food chain were developed for at least two decades, in Greece only recently have emerged such organizational systems. In this frame, it is very interesting to investigate the role of agricultural cooperatives in these new forms of supply chain.

A characteristic and innovative form of short food supply chain in Greece is the distribution of fresh cow milk via automatic sale machines in northern Greece. The idea belongs to a newly established agricultural cooperative (in 2010) of local pasteurized cow milk which consists of 102 dairy cattle farmers. The pilot installation of small number of sales-machines in 2014 caused the vivid interest of consumers resulting in rapid proliferation of the number of automatic instruments in several urban centres of northern Greece.

The main aim of this work is to investigate the following topics:

1. Consumers' propensity to use a SFSC in order to purchase milk.
2. Consumers' perception for cooperative products.
3. The influence of economic crisis for the consumer's preference towards SFSC.

METHODOLOGY

A questionnaire was developed in 2015 and an-swered by 489 consumers in Thessaloniki, a city of approximately 1 million people in the northern part of Greece. Respondents rated statements on a 5-point Likert scale anchored by 'completely disagree' (1) versus 'completely agree' (5). The results were analyzed with the help of IBM SPSS STATISTICS version 22 program.

RESULTS

The respondents are relatively young, by 73,9% less than 50 years old, well-educated people (almost half of them-45,1% are highly educated). They belong in the middle or lower economic class (44% has family monthly income less than 1000 euros and 36,2% between 1000-2000 euros). However, similar researches in other countries showed that SFSCs refer mainly to the middle or the upper economic classes of consumers (Johnston 2008), which lead to strong criticism for SFSCs.

The analysis reveals the following according to the research questions:

1. *Consumers' propensity to use a SFSC in order to purchase milk*: Consumers prefer to purchase milk via a SFSC than from a conventional supply chain (e.g. super market) by 76,5% (34.4% very much and 42,1% much).
2. *Consumers' perception for cooperative products*: The fact that the product has a cooperative brand, it influences positively the 81,4% of the respondents. Generally, they have a positive attitude to cooperative products, as the 68,1% of them declares that they trust them "much" and

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"very much". Moreover, they want to support small Greek farmers (87.8%).

3. *The influence of economic crisis for the consumer's preference towards SFSC*: The economic crisis does not seem to influence severely consumers' preferences towards SFSCs. The lowest price of the cooperative product (approximately 0,1 – 0,2 euro) in comparison to the other brand products is less important motive (in relation to the before mentioned motives) but still has a positive impact on the 54,2% of the respondents. The economic crisis of the last years does not constitute the most determining factor for the turn in the SFSC as it influence S less than 30% of the respondents. Moreover, almost half of them (45,6%) have an unemployed member in their family.

Table 1. Consumers' willingness to support

	Very little	Little	Moderate	Much	Very much
Coop products	1,8	5,1	9,2	49,1	32,3
Greek farmers	1,4	1,6	5,7	43,6	44,2
Greek products	4,1	7	21,7	41,3	21,1
SFSC	2,9	4,5	10	42,1	34,4
Economic crisis	8	21,9	19,6	16,4	33,3

Finally, in the relevant question, the vast majority (82%) declare that they would like the expansion of SFSCs in other food products (fresh or manufactured).

CONCLUSIONS

This case study refers to a SFSC that began as an initiative of a producer cooperative, contrary to what usually happens with the majority of SFSCs, where consumers are the starting point. *The research reveals that the consumers are positive towards innovative distribution channels like SFSC. Moreover, they feel more comfortable purchasing brand products from local producers not only in order to support them in the middle of the severe economic crisis, but also because they trust them. The fact that the specific milk product has a cooperative brand, constitute a very strong motive for its sale. Moreover, in general, consumers are positive for cooperative products. This means that local cooperatives can probably gain credibility in marketing themselves as cooperatives with local origin. Finally, the economic crisis has not influenced in great extent the consumers' preferences towards the specific products. However, it should be mentioned that branded milk products have very low elasticity and therefore it is expected not to find strong relevance between price fluctuations and demanded quantities.*

As a concluding remark, this movement creates a sort of "civil food network" as it contributes in the restructure of the urban-rural relations (Renting et al., 2012).

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Review of postharvest aspects of fruits and vegetables subsector in Uzbekistan

G. Sanaev, K.R. Kim, Sh. Hasanov, I. Ganiev[1]

***Abstract* – Uzbekistan has very conducive and very fertile land for growing fruits and vegetables which makes it one the main producers in CIS countries by creating an easy access to the growing Central Asian and Russian consumer markets. Recently policy in agriculture of Uzbekistan is weighing more on diversification of agricultural production, which in turn is resulting on increasing of high-value agricultural products such as fruits and vegetables. However, some estimates suggest that in Uzbekistan about 30–40% of fruit and vegetables are lost or abandoned after leaving the farm gate. Main findings from review of postharvest state in Uzbekistan suggest that combination of interventions and innovations such as: capacity building to farmers and other stakeholders through training and extension services; expansion of public investment in infrastructural development; promotion of private sector participation in infrastructural development; and expansion of R&D for the generation of appropriate postharvest technologies and quality assurance system; are required. In this paper, study reports, empirical analysis and theories have been explored and multidimensional analysis methodology has been implemented to review postharvest aspects of fruits and vegetables subsector of Uzbekistan.**

***Keywords* – postharvest management, value addition, innovations, Uzbekistan.**

INTRODUCTION

Uzbekistan is one of the main producers of fruits and vegetables in the CIS, due to its favourable and very fertile land. It produces a range of high quality agricultural products, from basic commodities such as cotton and wheat to higher value horticultural products such as cherries, pomegranates, and other fruits and vegetables. The high quality and wide variety of products, easy access to the growing consumer markets in Central Asia and Russia, vast pool of skilled and inexpensive human resources, and a wide variety of Government incentives are contributing towards the attractiveness of this sector. A num-ber of laws have been adopted by the government of Uzbekistan to support fruit and vegetable production. These include the Resolution "On the predictive parameters of production and use of fruits and vegetables, potatoes, melons and grapes in 2011" (2010), the Decree "On measures for deepening economic reforms in fruit and vegetable production and viniculture" (2006), the Decree "On additional measures on stimulating the attraction of direct foreign investments" (2005), and the Resolution "On additional measures on deepening processing of raw agriculture products, increasing volume of production and expanding assortment of food products for 2012-2015".

However in order to develop fruits and vegetables subsector Uzbekistan appropriate postharvest management technologies should be applied to the subsector. Some estimates suggest that in Uzbekistan about 30–40% of fruit and vegetables are lost or abandoned after leaving the farm gate. Huge postharvest losses lead to diminished returns for producers. Application of appropriate postharvest management is crucial in provision of food quality and safety. In addition it determines market competitiveness and producers' profits. There are many constraints such as inefficient handling, weak transportation; poor technologies for storage, processing, and packaging; and poor infrastructure in the country. In particular, underdeveloped infrastructure for storage and processing in most parts of Uzbekistan is the main reason of waste. Major infrastructural limitations are negatively affecting domestic distribution and export of horticultural products. As Choudhury (2006), states: "Considerable waste occurs owing to the fact that small farmers lack resources and are unable to market their produce and implement suitable postharvest handling practices. (Choudhury, 2006, p. 16.).

METHODOLOGY

For developing postharvest management technologies in Uzbekistan establishing of agro based clusters were proposed where several stakeholders are aimed to participate. Therefore, the potential of the subsector is thoroughly examined with the aim of designing a comprehensive scheme for implementing hypothetical agro-based pilot clusters in Uzbekistan. A detailed assessment of the current situation of Uzbekistan's agricultural production, post harvesting, processing and marketing stages with particular reference to the fruits and vegetables subsectors was made along with a review of the experience of agro-processing sector in Korea to draw policy recommendation for the implementation of agro-based clusters in Uzbekistan. Special emphasis was given to postharvest interventions aimed at reducing post-harvest losses at the various stages within the value-chain. The study focused on two districts – Bulungur and Jambay – which were selected as pilot for implementation of agro-based clustering for tomato and apple respectively. A supporting system for implementation of postharvest management system is outlined in detail.

RESULTS AND DISCUSSIONS

As stated previously, case studies of two districts of Samarkand region, namely in Bulungur and Jambay districts were carried out. In both districts production, postharvest management and processing stages were analyzed. The main problem of tomato production in Bulungur district is related to post-harvest activities, as about 25-33% of commodities is lost during post-harvest season. Problems of transportation, unstable contracts between growers and processors, and a lack of storage houses in rural areas have worsened the postharvest losses. Lack of postharvest research and development programs aimed at generating appropriate postharvest

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technologies in Bulungur district is also in serious shortage.

12-15% of apples produced in Jambay district faces postharvest losses. Similar to the situation in Bulungur, there is a critical shortage of postharvest technology due to insufficient R&D in producing appropriate postharvest techniques. Although postharvest loss in the case of apples is relatively lower than that of tomatoes, there will still be some loss, which calls for similar actions. In addition, the R&D programs at national level should also take apple into consideration in terms of establishing appropriate postharvest technologies.

SUGGESTIONS FOR THE SUPPORT OF POSTHARVEST MANAGEMENT IN UZBEKISTAN

This section provides a summary of the policy suggestions drawn from the study.

Enhancement of Postharvest Management Practices

There is a considerable loss of produce during harvest and transportation in Uzbekistan due to such constraints as lack of collection centres in major producing areas, suitable harvesting equipment, storage facilities and proper transportation systems. The development of an integrated postharvest management system for fruits and vegetables, with proper infrastructural facilities and logistical support is crucial for reducing postharvest losses in the subsector and improving the marketing of fruits and vegetables. A combination of interventions such as: awareness creation and capacity building to farmers and other stakeholders through training and extension services; expansion of public investment in infrastructural development; promotion of private sector participation in infrastructural development; enhancement of public-private partnership in provision of infrastructural services in the fruits and vege-tables subsector; and expansion of R&D for the generation of appropriate postharvest technologies and quality assurance system; are required.

Value Addition and Expansion of Market Access

A large proportion of fruits and vegetables in the region is marketed mainly in fresh form with little processing and value addition. Interventions aimed at enhancing value-addition strategies could benefit both farmers and processors. This can be achieved by promoting commercialization of production, identifying potential markets, developing market information systems and marketing strategies, promoting private sector participation in agro-processing, ensuring quality standards, constructing suitable market infrastructure (market centres at various levels), and promoting joint marketing and distribution services. In addition, innovations in agriculture such as introduction of new and improved varieties and production technologies, adoption of efficient processing techniques, development of high quality processed food for export markets, expansion of R&D programs in processing, establishment of specialized research institutes, and identification of geographical advantages along with better understanding of the characteristics of export markets also present paramount benefit to achieving these goals.

Ensuring Food Safety and Quality

While there are practical measures and interventions being taken by the government to ensure safety standards, the level of implementation of such measures is still far from sufficient and needs to be improved further. Ideally, ensuring food safety and quality requires implementation of quality standards such as Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), and Hazard Analysis and Critical Control Point (HACCP). Addressing the challenges of safety standards also requires joint public and private efforts. In particular, the public sector should start to take the lead in policy (food-safety legislation and standards), in research on evaluating the risk and good management practices, and in disease surveillance. In addition, provision of appropriate food safety and quality laboratories, along with trained scientists is crucial. Other interventions that need to be implemented include: creation of explicit standards covering domestic and international markets with appropriate inspection capabilities; training of horticulture value-chain participants; and dissemination of safety-related information and practices during harvest.

Human Resource Development

Human resource development is required at all levels. In this regard, educating and training of farmers, processors, extension agents, scientists, industrialists, and marketing agents are essential. Moreover, all human resource programs should consist of long- and short-term goals. Promoting attitude of self-help, cooperation, and hard work among farmers, as well as bringing about changes in mental reform are also very important. Training and extension services in postharvest treatment and management in fruits and vegetables subsector are strongly recommended to be offered to farmers, processors, researchers, and government officials in the relevant ministries.

Expansion of Investment in Infrastructure

Despite government efforts to mobilize and expand investments in infrastructural development, the available infrastructure in rural areas are still not sufficient. This calls for concerted efforts in availing key infrastructural services that include investment in construction of infrastructure for postharvest handling, logistics, and marketing; production of cold-chain infrastructure (refrigerated transport, cold rooms, and low temperature sale stands); provision of better quality roads, transportation, communica-tion, electricity and other related services.

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Scrutinizing Visual Quality Assessment of Fresh Produce as Entry Point toward Strengthening Local Food Systems

Jorge M. Fonseca, Dalia Mattioni[1]

***Abstract* – In this study we hypothesize that one of the most significant steps toward promoting local food systems is through both analyzing consumer's demands and revisiting mandatory/ voluntary guidelines on cosmetic defects of food. The objective of this study is to provide a holistic analysis to whether "blemished" fresh produce entering the food supply chains carry food safety risk or rather opportunities to promote local food systems. This work was conducted studying various sources of information, including: i) quality standards (both voluntary and mandatory) and other regulatory tools; ii) analysis of range of characteristics prevalent in assessing visual quality of selected fruit and vegetables along the supply chain; iii) survey to consumers of locally produced fruit and vegetables. The results demonstrated that standards for grades of fruit and vegetable indirectly exclude local food producers. Moreover, terminology used by current standards to describe physical defects is confusing which has influenced the way to assess produce by actors in the supply chain, as well as consumers. We conclude that better understanding of field-physical/pest damaged fruit and vegetables and its scientific validation of the relative food safety risk may become an important additional tool toward stimulating consumption of local produce.**

***Keywords* – blemish, creedence parameters, foodsafety, postharvest, standards.**

INTRODUCTION

Local fresh horticultural food systems are often linked to several positive factors contributing to a sustainable society, including better standard of living in rural areas, a fairer income along participants in the food system, a more diverse diet for urban dwellers(Dimech et al., 2011). However, with the spread of global trade agreements and the increased establishment of rigorous quality standards (e.g. by new grocery stores), the inclusion of local products in food systems has shrunk (Wirth et al., 2011).

Social movement in the past years have made substantial efforts to include local producers in food systems (Winter, 2003), but clear limitations for expansion remain. The offer of local/indigenous varieties, commonly produced with low inputs, is increasingly non-alluring to buyers and the general public, given the long established popular wisdom that relates heterogeneous food surface with lower overall quality.

We propose to look more in-depth into the current quality standards, and determine whether those by default exclude local products that often reach harvest physiological maturity with high incidence of cosmetic defects. With up to 50% losses of fruit and vegetables worldwide (Gusttavvson et al., 2011), and similar high losses in potential nutritional benefits(White et al., 2014) the only acceptable reason for excluding fresh local production from the market must be a well-evidenced high food safety risk.

Our objective was to analyze the way visual quality of fresh produce is assessed and regulated, and determine opportunities to promote higher acceptance of local products by improved education and more science-base specificity in quality standards.

METHODOLOGY

This work was conducted investigating various sources of information, including: i) quality standards (both voluntary and mandatory) and other regulatory/public health information, ii) analysis of a range of characteristics prevalent in assessing visual quality of selected fruit and vegetables along the supply chain. Moreover, five consumers known to be driven by "credence" parameters (i.e. frequent buyers of a local organic food box scheme, Le ZolleSrl, Rome, Italy) when assessing quality of fresh produce were asked to express purchasing preference among fruits (oranges, apricots) that had different type of blemishes including fungi, mites, ethylene driven, thrips and other insects, as well as physical damages ranging from mechanical damages from field to nail punctures. In all cases the incidence of quality defects of the fruits was above 10%.

RESULTS AND DISCUSSION

The tendency to propose homogenous visual quality of food has resulted in most retailers establishing stringent measures in standards for products, which has in turn led to a major losses in previous steps in the supply chain(HLPE, 2014).

After revising a number of quality standards, we concluded that essentially in all cases fruits with 10% of area cosmetically damaged is what is tolerated for the lowest quality standard, including official measures as US number 2 grade (e.g. US Standards for grades of tomatoes, lettuce, oranges) or CODEX Class 2 (e.g. CODEX standards for bananas, oranges, tomatoes). There are a few exemptions as with apples cv. Yellow Newtown for which up to 20% of smooth russeting would be acceptable (US standards for grades of apples). However, there are a number of fruits (apples in this case) that will be prone to high incidence of russeting; in fact it is known that in the past, many popular apple varieties wereoften covered with russet without affecting eating quality(Watkins and Cole, 2013).

Moreover, terminology used by current stan-dards to describe visual defects is vague, which hinders interpretation.Blemish, a common word used in all

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standards, defined "as a noticeable imperfection, especially one that seriously impairs appearance"(Merrian-Webster Dictionary, Encyclopaedia Brittanica), while originating from the Old French word "blesmir"meaning making pale by wounding, does not explicitly refers to an injury that is open or internalized.

Under the premise of reducing the waste of food and the resources necessary to obtain it, in assessing quality the only ethical reason that justifies rejection of food is consumers' safety. In this regard, research shows that only blemishes that penetrate tissues could be associated with high food safety risk(McDowell et al., 2007).Data on food borne outbreaks does not clearly support a correlation of blemish incidence with pathogen-derived diseases. In fact, the only clear trend shown in the past few years relates to a great number of food borne outbreaks with cross contamination occurring during postharvest handling stages, most often at catering points; regardless of the origin of the product (Gormley et al., 2011). While clinical pathogens have increased survival in porous surfaces (e.g. stomata, lenticels) and could become internalized through broken tissue, more than in smooth surface, natural skin cracking and healing during growth of fruits have not been associated with proliferation of clinical bacteria (Gautam et al., 2014). Blemishes in fruits, if not caused by reaction to environmental or pest stress, may normally be classified as whether originated from low calcium intake, chilling injury or ethylene driven (Watkins and Cole, 2013), none of which commonly derive in internal injuries unless mishandling occur.

Consumers can learn how to differentiate produce that has strict cosmetic defectsfrom those that have high safety risk, and this better understanding of field physical/pest and postharvest damaged fruits and vegetable, and its scientific validation of the relative food safety risk, may become an important tool toward stimulating consumption of local produce. However, the willingness or inclination to "sa-crifice" visual quality may vary among different groups of the population (Dimech et al., 2011; Wirth et al., 2011). Consumers have long used visual quality as a proxy when forming an opinion about the healthiness, nutritional value, and general safety of food (Dimech et al., 2011).Decision on purchasing "sustainable" food relies heavily on visual and aroma perception, along with health related attributes (Moser et al., 2011), even though evidence attributing different sensory attributes to produce grown from different production systems is still lacking (Murphy et al., 2011).

This non-well evidenced quality attributes often associated with credence parameters may be an opportunity but also a point for caution when strengthening efforts toward local production. The survey to regular buyers of local produce showed that absolutely all consumers would accept produce with visual quality defects even when those were finger nailmarks and internal injuries. This revealed that "trust to a provider" tops any visual quality attribute of the food for certain consumers. This finding is in agreement with Murphy et al. (2011) that concluded that among credence features, "local" is commonlyranked on top of organic, certification, origin, even when there is no clear evidence of a regulating body.

Our work revealed that the potential for improving penetration of local fresh produce may be prompted through efforts to better understand the connection of visual quality with safety, and with further exploiting increased appealing of credence parameters. We propose to educate consumers, both conventional and those driven by credence attributes, with the typology of cosmetic blemishes,so as to more efficiently reduce food losses and protect consumers from high food safety risk. This may need the revision of current quality standards.

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Constructing sustainable 'qualities' for local food systems in developing countries: The case of the Songhai Centre in Benin

Allison Loconto and Marcello Vicovaro[1]

***Abstract* – Post-harvest concerns, particularly in terms of quality (in its multiple forms), are both highly important and often down-played in the analysis of local food systems. The ability of actors in local food systems to provide consistent quantities of food products that meet these quality standards has not been consistently analysed in developing country contexts, nor has it been theorized sufficiently in terms of the institutions that are necessary for ensuring these qualities. This paper seeks to fill this gap by examining the construction of a sustainable local food system through a single case study of the Songhai Centre in Benin Republic. We show that a multi-actor innovation platform facilitates the creation of a local food system that produces products that meet actors' perceptions of quality and ensure sustainability.**

***Keywords* – quality, sustainability, local food system.**

INTRODUCTION

How to develop sustainable local food systems in developing countries is a question that is increasingly being asked by policy-makers, academics and practitioners alike. A number of approaches have been developed to understand how these systems can be analysed as well as how they might be implemented (e.g., Goodman et al., 2012). What is clear is that post-harvest concerns, particularly in terms of quality (in its multiple forms), are both highly important and often down-played in the analysis of local food systems. Qualities, specifically safety and sustainability as semi-credence qualities(Allaire, 2010), are often the key values that an emerging group of urban consumers are seeking(e.g., Roitner-Schobesberger et al., 2008). The ability of actors in local food systems to provide consistent quantities of food products that meet these quality standards has not been systematically analysed in developing country contexts, nor has it been theorized sufficiently in terms of the institutions that are necessary for ensuring these qualities. This paper seeks to fill this gapby asking *how does aninstitutional arrangementensure the qualities of safety and sustainability in a local food system?*

METHODS

Data was collected during three field missions to Benin between 2013 and 2015. We used purposive sampling to conduct semi-structured and structured key informant interviews (28) with producers, consumers and intermediaries. We conducted an analysis of the roles of diverse actor types in institutional innovations (Loconto et al*. forthcoming*). We conducted qualitative and semantic analysis using Iramuteq software to identify the definitions of quality that the diverse actors use to define what qualities they look for in organic products. We also collected data on their visions of the sustainability of the local food system using the LAB ESS methodology. We use the results of these two analyses to reflect upon the role of post-harvest aspects in contributing 'value' to local food systems in developing countries.

RESULTS AND DISCUSSION

Description of the network. Established as a youth training centre in 1985, the Songhai Centre incorporates three key sectors of the economy into a single organizational form. It is organised in such a way as to create synergy and complementarity between sustainable production methods based on an integrated production system that includes vegetable, pulse, cereals and fruit crop production, livestock raising, aquaculture and biogas production. It includes an industrial cluster model,where artisanal and modern food processing takes place (e.g., fruit juice, snacks, popcorn, baked goods, bread, fresh cuts and cured meats, soap, plastics recycling, plastic buckets). The centre also organises the production and sale of sustainable inputs (seeds, manure, compost and effective micro-organisms (EM)), provides agro-tourism and internet services, and is involved in developing appropriate technologies for sustainable production.

The Beninese network is currently made up of the main demonstration site in Porto Novo and five satellite centres in regional urban centres that source, when necessary, from surrounding rural farms. No link functions without a relationship to one or more of the other links and the satellites are governed through a centralised, hierarchical, chain of command that permits horizontal linkages between network members. There is a central procurement and marketing service that organizes the procurement of raw materials for processing and the sales of processed products from the Porto Novo hub. However, each satellite is also responsible for local sales of their fresh produce and artisanal processed goods. 54% of the value of finished products was internal to the network and 46% constituted product sales with a value of 4,185,694,831 FCFA (US$ 7,040,540), of which the off-farmsales of finished products accounted for 1,533,743,462 FCFA (US$ 2,579,830) in 2014.

Actor functions and institutional innovation. We refer to the Songhai model as an institutional innovation, because the actors in the network have had an active role in defining what Organic means in the country through their use of consumer-facing labels and how the ministry of agriculture administers

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it projects for youth training in agriculture (changing the rules) and with their efforts they have created an organizational model that is being replicated in other countries (the actors who use and enforce the rules). In fact, the greatest revenue in 2014 came from the corporate fees they received from the Nigeria operations.

This mobilisation has occurred through the establishment of a multi-actor innovation platform (Kilelu et al., 2013) that focuses the attention of the actors in the network on sustainable agriculture technologies. For this platform, the integrated production method that focuses on the use of EM is the core technology that has mobilised the researchers, students, producers, processors and buyers. We found that innovation intermediaries are highly influential in this system (carrying out 70 % of the functions) as the interactions between producers and consumers take place in the regional satellite centres.

Qualities and perception of the local food system. The Songhai model of production is maintained by consumer demand for the qualities of its products. These qualities are communicated by word of mouth, with posters and direct communications by the employees in the sales points, through direct experience with the agricultural techniques either by attending the centre's training program or through a visit of the demonstration site, by consuming the food in the on-farm restaurants or by reading the on packet labels. The consumer facing labels of Songhai products make claims about the product 'qualities' including: organic, healthy, medicinal properties of certain crops, and nutritional properties.

The core qualities that all actors are looking for in Songhai products are: 'egg yolk integrity', packaging, taste, freshness, and size. Producers valued: 'egg yolk integrity', freshness, shelf-life, organic and texture; Intermediaries sought: packaging, flavour, freshness, tested and consistency; and Consumers wanted products with the following qualities: nutritive properties, no chemicals, colour, freshness, and healthy. The concept of safety is seen only in terms of freshness, product tests and the absence of chemicals because of the organic production. All types of actors believe that the local food system is rather sustainable (Figure 1), with producers being the most optimistic about the economic sustainability of the system. Consumers were the most optimistic about the environmental cultural sustainability.

These results are actually reflected in the qualities that the different types of actors are looking for. We see the consumers looking for qualities related to healthy eating habits and to the safety from chemical residues provided by organic production methods. Intermediaries are more tempered in their perception of the sustainability of the system and are mostly focused on those standardized qualities that make for good products that can be sold. Producers represented a balanced conceptualization of quality and sustainability.

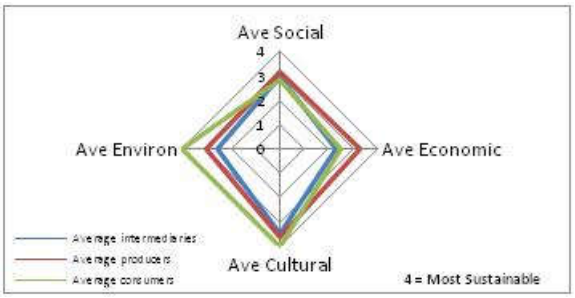

Figure 1. Perception of sustainability

One interesting conclusion is that the majority of the qualities noted by all types of actors are those related to the post-harvest processes that turn produce into products. This influence in the data can be linked to the high level of influence of intermediaries in the organizational and institutional set-up of this system (in the form of the Songhai Centre and its various satellite sites). Yet, it is because of the work of these intermediaries that both producers and consumers perceive the system to be more sustainable than the intermediaries themselves. Future research should further explore the specific post-harvest processes that can increase quality and sustainability in local food systems.

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Changing aspects of urban postharvest systems in Tanzania and Malawi

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***Abstract* – The demographic trends of Sub-Saharan Africa suggest that its population will double to 2.1 billion by 2050. More than half of these people will be urban-based. Our study analyses how urban postharvest systems in Tanzania and Malawi are responding to multiple drivers of change. In these two countries there has been no regular assessment of the food security of urban households; many stakeholders simply assumed that the availability of food in urban markets meant urban dwellers were food secure, irrespective of their purchasing power. Over the years food diversity in urban centres has increased, alt-hough maize dominates. Mills for processing grains into flour have become common, and household stor-age systems typically now involve sack storage and pesticide use instead of traditional bark granaries. Trade of food crops will continue to increase, and growing demand for processed products including perishable products will drive further transformations in food value chains. Postharvest losses are signifi-cant, and climate change and other stresses only intensify the need to reduce them. National food re-serves are back on the agendas of many African gov-ernments in recognition of the importance of food in their households' budgets. Strategies for supporting postharvest aspects of agri-food innovation systems in rapidly growing urban centres are presented.**

***Keywords* – postharvest agriculture; urbanisation; Sub-Saharan Africa.**

INTRODUCTION

The Sub-Saharan Africa (SSA) population is projected to double to 2.1 billion by 2050, and more than half the people will be urban-based. Alongside this trend, are other context-specific and dynamic drivers of change such as climatic change, communication technologies, policies, markets, globalisation, a demographic youth bulge, and changing food choices. The food and agricultural systems supporting these urban communities are adapting to varying degrees. This discussion paper focuses on the changing aspects of urban postharvest systems.

APPROACH

This paper builds on the literature concerning urbanisation and food systems in SSA and case studies from field work in different sized urban centres in Tanzania and Malawi. The field work involved transdisciplinary teams exploring the urban-rural interdependencies of food and agricultural systems and the impacts of climate change on them. Key stakeholder consultations (with regional & local government; wholesale and smaller traders & processors of various key commodities; national food reserves; small-scale caterers; market porters and management; brokers; international organizations) focus group discussions disaggregated by gender and wealth and multi-stakeholder workshops were undertaken to provide a holistic perspective.

FINDINGS

Situation analyses revealed there was no official assessment of household food security in urban centres of Tanzania or Malawi. Many key stakeholders equated the availability of food in markets with urban household food security. However, low-income urban households are especially vulnerable to food insecurity because of their low purchasing power, dependency on rural production, and the loss of nearby farming land due to urbanisation. Higher income urban households have greater opportunity to: buy food in bulk during seasons when prices are low, travel to source food, and produce their own food in peri-urban fields.

Since the 1960s, in urban areas of Central Tanzania, changes in staple foods and their associated processing methods have included a shift from women manually grinding pearl millet or sorghum into flour at their homesteads. Now they take their maize or pearl millet grains to small-scale commercial milling machines to produce flour for use in making a stiff porridge (*ugali*). Increasingly people are purchasing ready-milled maize flour, often opting for the finest, whitest flour made from completely dehulled grain.

The diversity of foods available has increased with additions including plantains, Irish potatoes, wheat-based products such as bread and chapatis, a diverse range of fish, beans, soyabean, baobab and other fruits. This increased diversity was attributed to factors including-the food cultures of incoming tribes, increased crop trading between zones, establishment of universities, child nutrition educational programmes, and improved incomes.

Much of the food consumed in these urban centres is grown nearby and is seasonal, with periods of excess and scarcity. A wide range of leafy vegetables were consumed, low-income groups tend to harvest wild leafy plants or pumpkin, cowpea, and sweetpotato leaves, and may sun-dry them to eat during the dry season. Wealthier groups favour Chinese cabbage or *Amaranthus* often produced using irrigation in the peri-urban areas. The consumption of products such as milk, transported fruits and meat is mainly restricted to urban centres, due to their high perishability and the costly, technical post-harvest infrastructure they require.

Use of locally grown and processed sunflower oil has increased, as frying of food has become more common and as middle-income earners question the safety and quality of cheaper imported palm oils. Most

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of the sunflower oil is processed in urban centres where the electricity supply is more reliable.

The frequency of consumption of livestock products, rice and chips was expected to increase, as these are foods preferred by the growing number of youth with sufficient income to afford them. However, some stakeholders felt that diet-related disease will lead to increased nutritional understanding and demand for more traditional foods, such as millet and wild vegetables. Other studies highlight the environmental impacts of increased urban demand for livestock products, although these vary with the production and processing systems used.

A wider range of foods were available in larger urban centres than small towns, and for higher wealth groups. However, in all groups and locations a wide range of carbohydrate dishes and vegetables were consumed. In urban areas of Central Tanzania the hungry period is from December to April due to field crops not yet having matured, seasonal food price rises, and cash being required to pay for school fees and farm inputs.

In the past the traditionally grown sorghum and millet grains could be stored with minimal insect damage for 2-3 years and could be easily bartered making them important in food security strategies. In contrast, the increasingly popular maize, even if treated with a commercially available pesticide, can rarely be stored beyond 9 months, but can be used to pay school fees etc. While households previously stored their grains in traditional cylindrical bark structures, sacks are now more popular as they allow simpler monitoring of grain quality and quantity, can be hidden easily, and moved or sold quickly in case of emergency.

In urban areas of Southern Malawi, while maize still dominates the food system, rice, bread and Irish potatoes are becoming more commonly consumed amongst higher income groups and processed cassava products amongst lower income groups. In Blantyre, the growing role of processed foods (based on wheat, sweetpotato, cassava and soya) imported from South Africa or domestically produced was recognised. Beans and small dried fish are the most important protein sources, supplemented with seasonally available wild protein sources.

DISCUSSION

Across SSA, postharvest cereal losses are estimated at 13.5%, equivalent to the annual caloric requirement of at least 48 million people (World Bank et al., 2011). As populations grow and climate change makes crop production increasingly difficult and variable, the need to reduce losses of this increasingly valuable harvest only intensifies. Interest in reducing postharvest losses in SSA has oscillated during the past 50 years, with its prominence tending to surge following serious food price shocks.

At national level, food reserves had withered in popularity since the 1980's due to free-market thinking. However, several factors have brought them back onto the agendas of many African governments. These factors include increasing food insecurity, climate change, urbanisation and population growth projections, and the 2007/08 food crisis (during which the serious limitations of relying on a widely deregulated private sector to manage stocks in a way that serves the public good became evident). The structure and operations of food reserves differ, they are expensive to maintain, require strong technical capacities, and can have negative effects on markets, private sector development and investment. But the political costs of unpreparedness are too high for states where food still represents a major share of households' budgets. There is a need to reduce inefficiencies and losses in food reserves, as their role in maintaining food and civil security in urban and rural SSA is expected to increase.

Other recent work has shown that the share of 'imported' food in the rapidly growing African urban middle-class diet does not rise with income, instead more meat and other locally produced and often perishable products (e.g. fresh fruits, fish and eggs) start to be eaten instead of imported wheat and rice (Tschirley et al., 2015). In East and Southern Africa the middle class is projected to increase from 27% of the population in 2010 to over 75% by 2040, which will drive demand for increased logistics, cold storage, processing, wholesale markets, and retail services. This highlights why supply chain services for commodities beyond grains, such as fresh produce, meat, fish and dairy should be a key investment priority of African governments.

Strategies for supporting the postharvest aspects of agri-food innovation systems in rapidly growing urban centres of SSA include: the need for service providers to develop tailored services and budgets to learn about and meet the needs of their diverse urban clients, e.g. involving them in needs assessments, providing them with agricultural, postharvest loss reduction and nutrition education; building of postharvest skills amongst service providers, as postharvest and urban topics are under-represented in agricultural curricula; government policies which support the enabling environment for private sector postharvest activity; and, building climate-resilience into urban agri-food developments.

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