



Minutes from the meeting

“Advancing food and health research in Europe - building a research infrastructure on food related to nutrition and health. Nordic Stakeholder Workshop on how Research Infrastructures for Big Food Data can help get us on the road to world class insight in consumer food practices”

The meeting was held at Lund University, Lund Campus October 3rd, 2017 and was arranged by Aalborg, Lund and Wageningen Universities in cooperation with RISE, Sweden.

The target group was key actor in the food sector in Nordic countries and the meeting was a follow up on the previous stakeholder meeting held at GS1 in march 2017. Part of the aim was to collect feedback from stakeholders in the Nordics on some of the findings from the Danish/Swedish case studies so far and to discuss the potentials of a future permanent data and research infrastructure. The meeting aimed at discussing how a research infrastructure could add value for a broad range of stakeholders in the Nordic and European food sector. The idea was to invite stakeholders to discuss and share their views with the researchers on how a better and more vigilant and real-time understanding of consumer food practices could be created through the sharing of data from a wide range of digital media sources. The Nordic Stakeholder meeting was planned in order to give participants the possibility to discuss how vigilance in this area might assist the Nordic countries to get on European roadmap for future research infrastructures in the food, nutrition and health area. Meeting organizers were Bent Egberg Mikkelsen, AAU; Leif Lundin, RISE; Yvonne Granfeldt, LU and Karin Zimmermann, WUR. The meeting was moderated by Bent Egberg Mikkelsen. The notes from the meeting were taken by RF team members Mukti Chapagain, Yulia Popova and Shova Acharya Dengal. The program is enclosed as appendix 1 and the presentations can be found in appendix 2. Participants are listed in appendix 3.

The participants was welcomed to Lund University with opening remarks from Yvonne Granfeldt, director of LTH food. A brief introduction to the food research at Lund University was given as well as an introduction to the new accelerator research infrastructure being built at the campus in cooperation between Denmark and Sweden and with the support of a number of other European countries.

An introduction to some of the driving forces behind the increasing policy interest in research infrastructures was given by Bent Egberg Mikkelsen, Aalborg University in a talk entitled *Interconnectivity & digitalisation as a new paradigm for food, nutrition & health research area*. The talk presented a brief overview of some significant cases of research infrastructure initiatives and underlined the need to cater for both the soft - and hardware parts of research infrastructures. That is that RI's should accommodate both data sets and at the same time facilitate a closer cooperation between the labs in the European arena that are studying food behaviour in experimental settings and using smart sensors for data collection. A brief overview of the three study cases in the Richfields design study was given: the Aalborg University Foodscape Lab, the Restaurant of the future in Wageningen and the Fake Food Buffet lab at ETH in Zürich.



Karin Zimmermann, Wageningen University and Research and PI of the Richfields introduced the idea of the *Food, Nutrition and Health Research Infrastructure – the FNH-RI* and gave an account of what kind of research questions might be answered using big food data in this type of infrastructure.

After a break, three business cases were presented. Erhard Nielsen, chief data analyst, Dagrofa Denmark explained how the company are making sense of big food data. In his lecture he spoke about the potentials of using loyalty card data from consumers and underlined the need for taking a close look at the General Data Protection Regulation (GDPR).

Bringing insight in form the “non food” area – the digital expertise is a crucial point in the discussion of research infrastructures. Mats Eliasson, responsible for Digital Strategies at Stanford Research Strategies gave a presentation answering some of the questions related to “the digital. His presentation was entitled *How Big food data analytics can assist food sector*.

Eric-Alan Rapp, CEO and founder of Homemate Aps then gave a presentation on how a new start up omni-channel retailer like Homemate anticipating to be using Big Food data. The talk was entitled *Slicing and dicing – finding structure and mining the data of Omni channel food retailer - case insights from a case study*.

The European efforts on creating an international Research Infrastructure is in many cases reflected by national efforts. That is also the case in Denmark. In her talk Michelle Williams, AU Food, Aarhus University introduced the Danish case of a strategy to create national funds to accompany the RoadMapping. The presentation title was *The FoodHay – food on the road map for Danish Research Infrastructures*.

Visualizing data about consumer behavioral and movement is an important component of Big Food Data analytics. In his talk Samo Olsen, CEO, Mapicture Picture this –a multi-source data predictive model to plan future foodscapes gave an account on the potentials in visualizing data on maps as well as the potentials of linking different sources of real-time online data simultaneously.

Hua Lu; Associate professor from AAU then gave a presentation on how digital patterns create by users of Social Media can potential provide important information on food behavior. The presentation was entitled *Can we use Social Media activity to make sense of food behavior*.

The interactive part of the day was introduced by Bent Egberg Mikkelsen that pointed to the fact that having 30 participants from all over the Nordic countries represented offered a unique opportunity for trying to reach some kind of common understanding of the need for research infrastructures in the food area. And that the discussion at the same time aimed at giving recommendations for the design of the FNH infrastructure.

The participants had in advance received a summary of the findings from Richfields workpackage 8 thematically organised around: best practices of data collection, ICT used for data collection and stakeholder demands and views. Kwabena Ofei briefly introduced the conclusion from the three WP8 deliverable corresponding to the 3 themes under the presentation title *Introduction to Richfield findings – best practices of data collection, data collection technologies and stakeholder views*.



Participants in the plenary was invited to share their views on what kind of constraints they would anticipate for a “food RI” for instance problems and barriers and what potential could be foreseen for an “food RI” for instance what kind of strengths & opportunities. A slight change of programme was made by the end of the day. The group based discussion was instead carried out as a plenary discussion.

There was a general consensus on the fact that the preparation of a future research infrastructure would benefit from a closer Nordic cooperation since the culture and structure of research system is quite similar. It was generally agreed that the digital nature of a research infrastructure make it imperative to look deep into the rules of data protection rules and routines and that inspiration and guidance could be found in the GDPR. Also the need for training of future users at more levels of the educational system was touched upon. The business model for running a permanent research infrastructure was discussed and the importance of getting support from the national research support systems was underlined. That includes both getting food, nutrition & health on the national roadmaps of each country as well as preparing for getting financial support in each country to support the activities. The discussion also showed that there is a general interest in building capacities around the borderline between “food” and “the digital”. For instance Block Chain Technology, internet of food things and cognitive computing was mentioned as examples of areas where close cooperation between the different kinds of expertise would be essential.

The discussion then briefly touched on the possible governance structure of a possible research infrastructure. It was generally agreed that it was important to have a broad range of stakeholders supporting the idea, not only academia in the food area but also other kinds of potential future data users such as industry, retail, government food agencies and market intelligence bureaus.

The discussion on the potential benefits included a part dealing with the soft and the hard parts of a research infrastructure. It was mentioned that such infrastructure should pay attention to hardware part that is linked to the physical installations – the food labs that is a part of the RF study and that cooperation and sharing of devices, sensors, protocols and equipment is an important part of the as well as the sharing and cooperation of the soft part (data) is facilitated?



Appendix 1. Program

Advancing food and health research in Europe - building a research infrastructure on food related to nutrition and health

Nordic Stakeholder Workshop on how Research Infrastructures for Big Food Data can help get us on the road to world class insight in consumer food practices

Venue: Lund University, Lund Campus
October 3rd, 2017 | 9.30 - 16.00



LUND UNIVERSITY



AALBORG UNIVERSITY
DENMARK



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Making sense of ever increasing amount of real time and digitally created data is one of society's important challenges. Its important for food system that is vigilant and ready to act fast on hazards and risks in the food sector and its important for science to be able to answer emerging research questions. The private sector, the 3rd sector and government as well as intra-governmental entities will obviously be able to benefit as well. The European RF design study is an attempt to address some of the most important challenges for a future globalized, well-connected and digitalized food sector. It proposes a design for a new vigilant research infrastructure in the food, nutrition and health area.

RF partners in the Øresund area therefore invite Nordic stakeholders to discuss insights so far from the RF study and to discuss how a future European research infrastructure can be created in a way that will add value for a broad range of stakeholders in the Nordic and European food sector, We invite key actor to discuss and share their views with us on how a better and more vigilant and real-time understanding of consumer food practices can be created through the sharing of data from a wide range of digital media sources.

Bent Egberg Mikkelsen Leif Lundin Yvonne Granfeldt Karin Zimmermann



Program

09:30 – 10:00 - Registration, coffee and light breakfast

- Welcome to Lunds University, opening remarks from Yvonne Granfeldt, director of LTH food.
- Interconnectivity & digitalisation as a new paradigm for food, nutrition & health research area. A brief overview of significant cases and ongoing research infrastructure initiatives. Bent Egberg Mikkelsen, Aalborg University
- What research questions can be answered with big food data embedded in a Food, Nutrition and Health Research Infrastructure? Presentation about the FNH-RI science case, Karin Zimmermann, Wageningen University and Research

11:15 – 11:35 - Coffee break

- Making sense of big food data - Erhard Nielsen, chief data analyst, Dagrofa Denmark
- How Big food data analytics can assist food sector, Mats Eliasson, Digital Strategies Stanford Research Strategies
- Slicing and dicing – finding structure and mining the data of Omni channel food retailer - case insights from a case study. Eric-Alan Rapp, CEO and founder of Homemate Aps,

- 12:35 – 13:30 – Lunch

- The FoodHay – food on the road map for Danish Research Infrastructures, Michelle Williams, AU Food, Aarhus University
- Picture this –a multi-source data predictive model to plan future foodscapes. Samo Olsen, CEO, Mapicture
- Can we use Social Media activity to make sense of food behavior. Hua Lu; Assoc Prof AAU



14:15-15.30 Have a coffee & Share your views. What should be in it for me?

- Introduction to Richfield findings – best practices of data collection, data collection technologies and stakeholder views. Kwabena Ofei.
- Practicalities of the break outs. Bent Egberg Mikkelsen

Each of the three sessions will be guided by a summary of Richfields findings. Groups will be selected by organisers. Sessions are aimed at giving recommendations for the design of the FNH infrastructure. Each group will discuss the following 5 questions.

1. What constraints can you anticipate for a “food RI”? Problems and barriers.

2. What potential can you foresee for an “food RI”? Strengths & opportunities

3. Governance of a research infrastructure. Who decide what?, which stakeholders should be involved in running the RI, which stakeholders needs to be involved in the governance? which privacy issues are important to take into account?

4. Business model of a research infrastructure. How could the RI make money? Who should be paying for using the structure? How do we makes sure that both the hardware (cooperation and sharing of devices, sensors, protocols and equipment) as well as the sharing and cooperation of the soft part (data) is facilitated?

5. ICT and the research infrastructure: How do we integrate different data sets and secure seamlessness, what computer power is needed? Can Block Chain Technology be utilized, how do we take maintenance and data management into account and what about access?

Groups

1. Group Bizz Moderator: Haris Hondo. Notetaker: Mukti Chapagain
 2. Group ICT Moderator Bent Egberg Mikkelsen. Notetaker: Yulia Popova
 3. Group Food Science. Kwabena Ofei. Note taker: Shova Acharya Dengal
- The results from each are presented in plenary by the moderator from each group. Wrap up presentation to conclude on user needs and feasibility in Nordic countries and the roadmap to proceed for the next steps, Moderated by Karin Zimmermann and Bent Egberg Mikkelsen
 - Closing remarks – what are the next steps towards a future research infrastructure?



Appendix 2. Presentations

- [Welcome to Lunds University & opening remarks.](#) Yvonne Granfeldt, director of LTH food.
- [Interconnectivity & digitalisation as a new paradigm for food, nutrition & health research area. A brief overview of significant cases and ongoing research infrastructure initiatives.](#) Bent Egberg Mikkelsen, Aalborg University
- [What research questions can be answered with big food data embedded in a Food, Nutrition and Health Research Infrastructure? Presentation about the FNH-RI science case.](#) Karin Zimmermann, Wageningen University and Research
- [Making sense of big food data](#) - Erhard Nielsen, chief data analyst, Dagrofa Denmark
- [How Big food data analytics can assist food sector.](#) Mats Eliasson, Digital Strategies Stanford Research Strategies
- [Slicing and dicing – finding structure and mining the data of Omni channel food retailer - case insights from a case study.](#) Eric-Alan Rapp, CEO and founder of Homemate Aps,
- [The FoodHay – food on the road map for Danish Research Infrastructures.](#) Michelle Williams, AU Food, Aarhus University
- [Picture this – a multi-source data predictive model to plan future foodscapes.](#) Samo Olsen, CEO, Mapicture
- [Can we use Social Media activity to make sense of food behavior.](#) Hua Lu; Assoc Prof AAU
- [Introduction to Richfield findings – best practices of data collection, data collection technologies and stakeholder views.](#) Kwabena Ofei.AAU



Appendix 3. Participants List

NAME	PLACE
Alsted, Martin	FOODJOB
Berget, Ingunn	Nofima
Bergsteen, Jenny	Food Nexus
Burleigh, Stephen	Food-health-science.lu.se
Champagain, Mukti	AAU Food
Davies, Jennifer	RISE
Dengal, Shova	AAU
Dyrholm, Heidi	Food Nexus
Eliasson, Mats	Stanford Research Insitute
Granfeldt, Yvonne	Lund University
Hondo, Haris	RISE
Hua, Lu	AAU computer science
Jevinger, Åse	Malmö University
Jonsson, Håkan	Lund University
Kugelberg, Susanna	WHO CPH
Lien, Nanna	The Medical Faculty
Mikkelsen, Bent Egberg	DCM/ AAU
Nairi, Khadija	WECR
Nielsen, Erhard	Dagrofa
Nordgren, Lars	Lunds University
Ofei, Kwabena	AAU food
Olsen, Samo	Mapicture
Popova, Yulia	IT university
Rapp, Eric Alan	Homemate
Rautiainen, Teija	XAMK University
Rinnan, Asmund	KU food
Rydberg, Anna	RISE
Williams, Michelle	Aarhus University
Zimmermann, Karin	WECR
Åsmund, Rinnan	KU food