The Political Economy of Satiety and Sustainability
-evolutionary experience from Danish agriculture

Jan Holm Ingemann

ISSN 1396-3503
1999:5
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Department of Economics, Politics and Public Administration
Aalborg University
Fibigerstraede 1
9220 Aalborg - Denmark

print: Kopicen tralen
Aalborg 2999
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- evolutionary experience from Danish agriculture

*Paper presented at the conference "Towards a Sustainable Society in the New Millennium", Umeå, Sweden 1999*
T.H. Ingemann: The Political Economy of Satiety and Sustainability
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Introduction

In the last three to four decades, Danish agriculture has experienced a diminishing number of farms in command of increasing amounts of capital and with a still more specialised and industrialised mode of production. A wide range of family-farms have been bought by commercial farms and the former shut down while the land has been amalgamated. Simultaneously, manpower has been substituted with capital, for example machinery and chemicals, to such a degree that the agricultural process of production now can be compared to industrial manufacturing rather than agricultural craftsmanship. The economic discourse concerned with these trends is typically held on a basic assumption stating the trends as a result of a natural and irreversible process induced by the fundamental market-mechanisms. In other words, it is claimed that the market wanted it that way. Contrary to this it will in this paper be claimed that it is rather a mix of political and economic mechanisms that should be seen as the cause. In that sense, it will be held that certain social sections wanted it that way.

It will be claimed too that this specific mix of social mechanisms has brought farming in Denmark and similar countries to an unsustainable mode of production, while industrialisation has been the answer chosen to meet satiety in the rich part of the world. Satiation combined with an almost zero growth of population in these countries implies a steady effective demand when it comes to foods. Industrialisation of the primary production has then led to a surplus supply followed by a decrease in the output price level. Simultaneously, industrialisation has caused serious impacts on environment
and human conscience and has not even solved the farmers’ income squeeze. Still, it will be held that the social forces that originally restructured Danish agriculture in late 19th century did create a social solution to social problems, but this solution has created, through evolution, the actual problem. On the other hand, the qualities of these social forces could be - and perhaps already are - to some extent reused to regain a sustainable trajectory and even sustainable economic growth: A strategy of satiety. It should be noted that sustainability will be used as a concept to cover a holistic and inclusive social notion based on respect for fellow men and their_sinequa non extended in time and space.

It might just as well, as part of the introductory note, be admitted that the present paper perhaps could be labelled as romantic and elitist. Romantic because the paper describes a certain trajectory of the past as a successful one without simultaneously rattling off all the nuances and reservations. It is here the purpose to extract certain constructive elements that might enlighten our present need for sustainability and even be of inspiration to find a way to fulfil this need. The paper might also be labelled as elitist due to the emphasis placed on intellectuals’ contribution to the development of important notions. These notions stated aims and means to guide society into adequate trajectories a century ago. The purpose is here to redraw attention to the importance of ideas and concepts, as this importance has been suppressed in social sciences in recent decades. However, it is not the ambition to advocate elitist or idealistic frameworks, but rather to contribute to a synthesis and, especially, to underline the need for such when the political economy of sustainability is in focus.
The paper contains three main parts. Part 1 outlines some crucial points of the evolution of political and economic actions in relation to Danish agriculture. Here, new trajectories will be in focus. The starting point will be an era of starvation in the 1870s, and the final point will be the present era of satiety. Part 2 will very briefly introduce a framework used to conceptualise the political economy of this evolution and explain the specific strategic choices made. Finally, part 3 will describe an attempt to sum up a provisional conclusion and, from that, indicate a way out, that is, a trajectory of sustainable growth.
Part 1. A brief outline of Danish agriculture X370-2000

This part will outline some crucial points of the evolution of political and economic actions in relation to Danish agriculture. The presentation will be given through three historical pictures of eras where new trajectories are chosen. The starting point will be an era of starvation in the 1870s, and the final point will be the present era of satiety.

Picture 1: The Danish co-operatives and parcel out communities - an era of starvation

The evolution of Danish agriculture in the years 1880 to 1920 will now be in focus. This span of years is in Danish history-books and in speeches described as a golden age of Danish agriculture and the entire Danish society. By means of a shift from plant to livestock production, Danish agriculture revitalised the economic performance and the cultural life in the rural societies - and Denmark was, in fact, a nation of rural societies. The nation then took advantage of rapidly increasing exports of the new commodities, especially butter and bacon.
Until the 1870s, Danish agriculture primarily produced cereals for export with the UK as the major importer. Besides export of cereals, Danish farmers exported live cattle to Germany. However, the prices of cereals began to decrease dramatically when the new world became able to dump cereals on European markets. This caused a serious economic crisis in European nations like Denmark, which depended on export of cereals, and it was hereby impossible for Danish farmers to make a living producing as hitherto. Here, it is essential to underline the economic importance of agriculture to Denmark as indicated in table 1. Most other trades depended directly on agriculture as sub-suppliers, so when Danish agriculture was in crisis, so was the Danish economy. That is why a major restructuring to enable a new trajectory was obviously needed [Ingemann 1997].

**Table 1: Relative importance of agriculture around 1870**

<table>
<thead>
<tr>
<th>Agricultural share of:</th>
<th>per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>National labour force</td>
<td>52</td>
</tr>
<tr>
<td>National exports</td>
<td>92</td>
</tr>
<tr>
<td>National GFI</td>
<td>50</td>
</tr>
</tbody>
</table>

Based on [Hansen, 1976]

In response to the crisis in the 1870s, Danish farmers began to increase the production of milk and pigs, but this increase was not enough. The favourable markets didn’t demand produce, but processed foods. In other words, it was necessary to process milk and pork. From milk, the primary commodity then became butter, while the primary commodity from pigs became bacon. There were many Danish farmers at that time, but most of them were rather poor.

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1 Share of labour force and of GFI counts the primary sector only, while share of exports includes manufactured, agricultural produce.
and they were unable, in general, as individuals to form the necessary financial basis to start a dairy or a slaughterhouse. On the other hand, their experience told them not to rely on the urban capitalists, while the latter might be attempted to abuse the former [Hansen, 1976]. As an escape from this double-binding problem, the ideas of co-operatives were founded. The co-operative way of organising production could compensate for the lack of financial assets to establish the necessary manufacturing plants. At the same time, this mode could ensure the farmers control and minimise the risks of exploitation by other sections. The ideas implied that the members undertook joint liability for the loan raised for the building. The operational profits where divided among the farmers according to each farmer’s contribution. In this way, the co-operatives were founded to manage manufacturing of farm produce and to supply raw materials to the farms.

The first agricultural co-operative was founded in 1882 and during the following years, co-operative dairies exploded in number. In 1888 alone, a total of 244 new dairies were built on co-operative basis. But the farmers didn’t stop here: From early 1880s, the British demand for bacon drew attention to this interesting market and the possibility to strengthen the Danish pork production, which was then modest. Skimmed milk returned from the dairies could be used as pig feed and, in combination with the expanding market for bacon in UK, an intensification of this enterprise seemed very prosperous. In 1887, a local farmers’ union founded a co-operative slaughterhouse. Three years later, ten co-operative slaughterhouses were founded and in 1900, 26 slaughterhouses were established around Denmark [Bjoern, 1992].

It is essential to point out that the co-operatives were not invented by the market or by the state, but by ordinary farmers in co-operation with
“mind-workers”, such as clergymen and teachers. The co-operative ideas were already developed and implemented in relation to consumers’ retail shops; the first consumers’ retail co-operative was in 1866 founded by a clergymen, and in 1880 more than 100 were established in rural areas [Hansen, 1976]. So here was a basic concept that the mind-workers could adjust and develop to agricultural purposes. Besides, the farmers had the willingness to unify and to co-ordinate their efforts through discourse and action.

The smallholding movement
The foundation of co-operatives became an essential part of Danish history with a certain collaboration that has called for respect among Danes and among international agricultural economists. However, there is another part of the story just as important but forgotten by most Danes and not mentioned in international literature: the parcel out communities and the transformation of the rural proletariat to family farmers.

The villeinage of peasants was abolished in the 1790s, but for smallholders it was maintained until 1850 when they got the opportunity to carry on as tenants and copy holders. So in the mid-19th century, the concept ‘smallholder’ covered day labourers and craftsmen who either rented or owned a house. They could do some gardening and perhaps they owned a cow and a few hens, but only if they were relatively well off. The more unfortunate rented a house without any land at all. Craft and gardening could not support the families, so they constituted a labour reserve for farmers and

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2 The concept ‘mind-workers’ might sound odd and old fashioned. However, the famous Danish philosopher N.F.S. Grundtvig, among other things founder of the Danish Folk High School, made a distinction between working by hand and working by mouth (meaning mind) [Waahlin, 1990].
landowners, especially in seed and harvest time on a day-to-day basis. On the other hand, craft and gardening provided a sufficient supplement to support the families in seasons with limited needs for supplement labour on farms and estates. It was then a mutual financial interest of farmers and landowners to preserve this labour reserve and to do it in a way that the families could provide for themselves when their labour was not needed [Skrubbeltrang, 1954].

However, from the late 1870s, the farm workers and rural craftsmen were caught in a social squeeze. Due to the above mentioned decreasing prices on plant commodities, the farmers and land owners were unable to hire labour. This was very serious for the rural proletariat, because they needed the income as hired workers to stay alive. Roughly speaking, they could choose among three alternatives: 1. emigrate to the new world which implied giving up their way of life and cutting family and social ties. About one third chose this way out; 2. move to the relatively small cities which did not seem very prosperous at that time. About one third chose that possibility; 3. stay in the countryside and try to do their best with their very limited means, such as gardening and production of eggs. The last third chose that possibility and formed the basis of a large expansion of smallholdings with intensive livestock production.

The ideas of smallholdings were introduced to enable the farm workers to provide on their own for their families. By help from several clergymen and teachers, they managed to establish local and regional associations. At the founding of a regional association covering the Danish main island, Zealand, an important resolution was carried in 1902: the so-called “Koege-resolution” which expressed the core of the smallholding movement, for instance a morally determined recognition of the legitimate rights and the worth of
fellow men and future generations. It also expressed that everybody should have equal opportunities and that this should be obtained by organised collaboration. The notion is a social-liberal statement of democratic equity rather than individual liberty. The resolution consequently states that the dignity of the individual should be ensured by the provision of means to support himself and then obtain an ability to contribute to social economy. They ask for the opportunity to prove their worth by equal opportunities, and that social caused profits on land and real estate are taxed instead of labour. The resolution states too that every generation is obliged to avoid collection of short-term profits at the expense of future generations [Ingemann, 1997 a].

In the 1890s, the smallholders’ movements tried, in collaboration with their mind-working supporters, to induce the Danish government to implement a parcel out through legislation and various positive measures. The result was an act passed in 1899, providing very limited loans for parcel out ends, but the act induced no means at all to provide the land needed. After several initiatives from the movements, the act was revised in 1904, but there was still no initiatives to provide land. So the small farmers’ movements lost patience and grabbed the spoon themselves. They founded parcel out communities by the same means used to form co-operatives. These communities bought bigger farms, for instance after a fire, parcelled out the land and sold the parcels to farm workers who could then be established as smallholders on family farms. Through nation wide co-operation, the parcel out communities provided loans, budgets, architect-designs, etc. The efforts of the parcel out communities resulted partly in set up of smallholdings and partly in provision of supplement land to holdings too small to provide for a

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3 Note that the Danish concept ‘house-man’ (a man in a house) was - and is - still used, but now the substance of the concept has changed to cover a small family farm, typically with a limited area of land but an intensive livestock production.
family. In the 1920s alone, the communities established about 10,000 smallholdings and provided supplement land to about 2,000 holdings enabling them to be established as family farms [Skrubbeltrang 1954].

The parcel out communities became an economic and social catalyst created, not by market or state, but by ordinary people in co-operation with progressive mind-workers, who did not have personal, financial gain as their objective, but where driven by social indignation and an idea of a better society. Besides, they believed that indignation combined with positive ideas leads to an obligation to act.

**Collaboration between trade and government**

The restructuring and change of the trajectory of Danish agriculture outlined above was, of course, a huge operation of essential importance to a small country with an economy based on agriculture. The government also became a useful collaborator in this shift, as several actions were taken in collaboration with the government to ensure the success. Two examples should be mentioned:

- The veterinary control was operated and financed by the government and used as a governmental guarantee concerning the quality to the importers (primarily in the UK);
- the Danish butter-brand “LURPAK” was stated by law, but administered by the private association that co-ordinated trade, marketing, etc., among Danish dairies. The brand assured that the butter was of high quality and could provide a higher price. At the same time, the brand meant that small dairies could participate in export-initiatives by use of the brand [Bjoern 1982].
So, at the beginning of the new century, Danish agriculture had already founded a tradition of collaborating and co-ordinating their efforts in the market through the co-operatives and, at the same time, using governmental regulations and subsidies to create a strategy for running and developing Danish agriculture. Here, it is important to emphasise that the subsidies were seen only as means to becoming self-supporting. Thus, mixed administration was introduced where the private sector became able to use governmental institutions to secure commercial interests.

Table 2: Economic performance of agriculture 1875 - 1910

<table>
<thead>
<tr>
<th></th>
<th>1875</th>
<th>1910</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount produced, index</td>
<td>100</td>
<td>250</td>
</tr>
<tr>
<td>GFI agriculture, DKK mil. kr.</td>
<td>335</td>
<td>582</td>
</tr>
<tr>
<td>Labour force, agriculture</td>
<td>486,000</td>
<td>527,000</td>
</tr>
</tbody>
</table>

Based on [Hansen 1976].

*Picture 2: The efficient farm and negotiated economy - satiety emerging*

The span of years from around 1920 to around 1950 could be labelled as the classical period when the livestock producing sector (farms and co-operatives) strengthened the business, although hard times emerged in the early 1930s.
and, to some degree, during world war II. In these years the two main associations (Farmers' Union and Family Farmers' Association) typically represented the middle size farms and the smallholdings. The latter still founded their beliefs on the main points of the Køge-resolution, while the former fought to consolidate their farms in a more business-oriented spirit. The contradicting beliefs surfaced in relation to social questions, but also when it came to securing a part of the strictly limited factor of production, namely land. On the other hand, the trade was characterised by a certain stability, and the conflicts didn't change the trajectory into fundamental new directions.

However, in the 1950s, Danish farmers found themselves in an income squeeze. Partly due to increasing protectionism on major export markets, because several nations aimed at self-sufficiency when it comes to foods, but also due to the neglected fact that satiety was emerging in the wealthy part of world. The decreasing market potential meant decreasing prices to the farmers, and thus an income squeeze. In this atmosphere, where the dominance of agriculture in the Danish economy and way of life was threatened, the farmers' associations began to suppress their conflicting beliefs and unite their efforts. First, they appealed to government to consolidate the sector and to provide the farmers attractive standards of living. The focus on standards of living stems from the fact that the crisis emerged when the farmers observed that other sections of the population attained material goods of the industrialised society, such as cars, radios, televisions, laundry machinery, etc. The farmers wanted to acquire these goods too, but were not able to do so on their own. That is why the farmers' associations appealed to the government to ensure farmers an income on a level similar to that of other

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4 When times were not really hard during the war, it was because Danish agriculture was able to continue production at a high level and at high prices. The problems were primarily caused by very limited possibilities to reinvest.
sections in Denmark. As a matter of fact, the main associations commonly formulated the aim as to ensure farmers an income equal to that of skilled workers. They formulated demands based on moral judgements and, at the same time, in spite of traditional, liberal values, they interfered in the distributional demands from other social groups, for instance by strongly advocating income policy. This change in beliefs was remarkable when it comes to the smallholders who made a break with the ideas of the Koege-resolution [Ingemann, 1997 a].

Government showed a positive attitude to the farmers' demands. Several measures were intended to meet the specific problems confronting Danish agriculture and, to some extent, the nation through collaboration between government and agriculture throughout the 1950s. Among the formulated means were [Bjoern, 1982; Ingemann, 1998]:

- Join the EEC as soon as possible.
- In collaboration with the government, speed up the use of modern marketing in the export markets.
- Establish a large subsidy-system.
- Speed up R&D efforts and the Danish advisory-system.
- The notion of "The Effective Farm".

It was expected that Denmark - along with the main market the UK - could soon join the EEC, and membership was seen as a key to a fundamental solution: it would ensure admittance to a comprehensive market and to enjoy the benefits from the EEC’s agricultural policy means. Though it was not said out loud, it was somehow implicitly stated that when Denmark became a member of the EEC, the farmers could produce as much as they liked, and the

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5 On one hand, the farmers wanted to secure their own level of consumption through a redistribution of wealth provided by government and then, to some
EEC would guarantee the prices and buy the surplus. Once Denmark became a net beneficiary of the EEC, other countries would be paying the bill.

In the meantime, the use of modern marketing should be implemented in the export markets to increase the market shares. To create the financial basis, government granted subsidies and furthermore by law enabled the associations to levy a duty on farmers' produce when brought to manufactories. The duty was then transferred to national funds for marketing purposes controlled by the farmers’ associations.

The farmers’ demand for a certain income level was from 1958 ensured through massive governmental subsidies. The idea was that the subsidies would be formed as mechanisms similar to the EEC agricultural policy means. Originally, the subsidy scheme was introduced as a temporary solution, and the Danish agricultural policy was labelled as the “waiting room policy”. Farmers were waiting for EEC membership, after which the European community could assume subsidising and policy measures in general according to Danish agriculture. The national Danish subsidy system, where the Danish government provided the financial security for the trade, had to continue until 1973 when Denmark finally became a member. The system inferred that the farmers' associations took part in collective bargaining with the government, parallel to the bargaining on the labour market.

Another method was to make farm production more effective by introducing new, industrial farming technology, such as chemicals and automated systems in livestock production. The farmers’ associations received governmental subsidies for advisory-centres, where specialists in a vertical system were - and still are - linked closely to Danish R&D institutes for degree, transform themselves into wage earners. On the other hand, they were, to some degree, employees through their collective ownership of co-operatives.
agricultural technology. This system was meant to ensure a quick transformation of R&D results in to practicable use on the farms.

In addition to using public finances to secure their income, farmers formulated the notion of the effective farm [Ingemann, 1998] with the following chain of arguments: Farmers must be secured an income similar to that of other sections of the population. When the income from farming is limited, then it is necessary first to limit the number of farmers. Farmers who must leave the trade can get jobs in the urban areas, and in that way automatically obtain a level of income similar to that of other sections. This means that fewer farmers stay in business and they can share the total income of the sector. Second, every farmer must - by means of real capital and swallowing up the less effective farmers’ property - increase production. When fewer farmers stay in business, and each produces more, they can increase their level of income. Or, to put it the cannibal way: Eat your neighbour or be eaten.

From the late 1950s, Danish agriculture was designed to stay in business by means of a strict vertical co-ordination within the sector, by subsidies and by increasing productivity. Besides, the notion of the effective farm was supplemented by the notion of the effective co-operative, which implied concentration. The agricultural policy was formed to fit the notion of the effective farm covering a wide spectrum of policies, such as governmental provision of R&D, favourable tax depreciation schemes related to investment in machinery and buildings, besides governmental security for loans to investment purposes.

The described change of trajectory implied that, from 1950 to 1995, Danish agriculture more than doubled production, but at the same time the aggregated GFI (in fixed prices) of the sector was almost halved. Simultaneously, Danish agriculture has experienced a dramatic decline in
value added. In 1951, value added came to about 88 per cent of the production value, compared to 44 per cent in 1994. Furthermore, the value added in slaughterhouses is, in these years, only 27 per cent and in dairies only 21 per cent, compared to Danish manufacturing industry where the aggregated value added comes to 44 per cent [Ingemann, 1998].

Table 3: Relative importance of agriculture 1910 - 1996

<table>
<thead>
<tr>
<th></th>
<th>1910</th>
<th>1951</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>206,000</td>
<td>65,000</td>
<td></td>
</tr>
<tr>
<td>Share of GFI</td>
<td>30</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Share of exports</td>
<td>64</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Share of labour force</td>
<td>42</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>

[Hansen, 1976; Ingemann 1998]

Picture 3: Development of organic farming in Denmark - sustainability on the agenda

In the late 1960s and in the 1970s, several environmental movements, an angler association, a few scientists, and a few waterworks managers stated their worries about environmental perspectives and linked several of these to modern, industrial farming. An environmental protection act was passed in parliament in 1974, but it did not include agriculture. It was the predominant notion that farming did not create specific environmental problems. However,
in the 1980s, after several severe occasions of oxygen deficiency in Danish waters focus pointed, at agriculture. The farmers’ associations tried to avoid regulation, especially by claiming that the debate was a media creation intended to persecute a decent trade, crucial to Danish economy. Several protest meetings were organised by farmers’ associations against victimisation and to emphasise the obligation of national politicians to defend and protect farmers against absurd and emotional attacks, especially from the political left. The typical reactions from established farmers and their associations to discussions about environmental and animal welfare issues have, until recently, been the same.

From the mid-1980s, several acts have regulated Danish agriculture, for instance taxation on pesticide use and more bureaucratic measures regulating the use of fertilisers, etc. Further, the social discourse concerning agriculture and environment brought two new issues to the centre: The concept of sustainability and the need for serious changes in the EEC’s agricultural policy.

Around 1991 and 1992, a widespread social debate about sustainability started in Denmark. The starting point was the Brundtland-commission report [World Commission, 1987]. The debate was primarily organised through collaboration between various movements. Many private as well as public institutions were inspired to frame action plans for sustainability, for example, action plans for Danish farming provided by the Ministry of Agriculture and most farmers’ associations. Almost all these action plans redefined sustainability from a concept of environmental long-term survival of man to a concept of short-term economic profit for farmers and, to some extent, of social economy. The dominant notion of the plans was: Consideration for the business economics and social economics of the agricultural trade implies that we must prioritise the ability to compete (infer implicitly competition on prices). It is essential to avoid restrictions regarding, e.g., the environment,
unless they are applied internationally. It was also stated that no one has the right to interfere into the farmer's property right to manage land as he finds it appropriate [Thomsen & Ingemann, 1992].

The second matter in question was the EEC's agricultural policy measures and means. In the early 1990s the EEC Commission seriously dealt with the negative effects of the effective farm. This resulted in the MacSharry Plan, which was based on the fact that the original aim - self-sufficiency when it comes to food inside the EEC - was achieved long ago and replaced by a surplus production causing environmental, financial, rural, and other side effects. It was also pointed out that the largest and most intensive producing farmers received most of the subsidies, while farmers in general still had income problems. The reaction among Danish farmers was mostly similar to the reaction to the environmental debate in the 1980's. For instance, Danish farmers burned MacSharry, then EEC commissioner, in effigy. After massive lobbying from European Farmers, in which Danish associations played a key role, and perhaps in collaboration with industrial manufacturers related to agriculture, the plan was modified so that the farmers producing the largest amount of produce still receive the largest amount of transfers.

**Windpower and organic foods**

However, it is of essential importance not to neglect another parallel part of the story. While the farmers and their associations were preoccupied with efforts to preserve status quo, that is, to avoid restrictive regulations, a few pioneers and grassroots movements endeavoured to grab the spoon themselves. Following the post materialistic beliefs in the late 1960s [Inglehart, 1995], and encouraged by a part of the intellectuals and experts from R&D
institutes, they took on experiments in an attempt to implement ideas of alternative energy production and organic farming. Simultaneously, most of them were convinced that they would fulfil themselves in this way. Through the 1970s, these pioneers and movements succeeded in convincing the majority of Danes that it would be better to develop alternatives to nuclear power. As a matter of fact, the plans to implement nuclear power in Denmark were abandoned; instead Denmark in the 1980s became the world leader when it comes to wind power technology [Joergensen & Karnaee, 1991].

The introduction of organic food production partly came a few years later. As mentioned above, the oxygen deficit in Danish waters became very obvious in the mid-1980s, which created a basis for increasing consensus about the environmental impacts of industrial farming, although most farmers strongly disagreed. Simultaneously, increasing focus on the impacts on animal welfare evolved. The pioneering organic farmers and their association were able to offer a holistic concept of environmental and animal-friendly farming. Besides, they had reinvented co-operatives to handle manufacturing and distribution of foods. Through their association founded in 1981, they started negotiations in the mid-1980s with the consumers' retail co-operative, the dominant retail distributor in Denmark. The co-operative began to distribute organic foods on a small scale, and simultaneously the association started negotiations with the government. These efforts led to an act passed in 1987 after which government assumed the certification scheme of organic farms, organic manufacturers, and distributors of organic foods. The act also ensured governmental subsidies to farmers who would convert to organic production methods according to the certification scheme; the subsidies should compensate for the costs of conversion. In addition, funds for research, development and advisory services in relation to organic farming and manufacturing were established [Andersen, 1995].
The organic farmers' association as well as several environmental protection associations formed action plans for sustainable farming simultaneously with the conventional associations and the Ministry of Agriculture as mentioned above. Through these action plans, their commercial appearance, and the following discourse, the organic farmers and environmental protection associations where able to seriously influence the predominant notion of the environmental impact of industrial farming.

On the commercial side, organic farmers have, in ten years, gained about five per cent of the total Danish retail market for foods [Abrahamsen & Ingemann, 1998]. This figure might seem small, but it was almost nothing ten years ago. In this span of years, a serious competition between a conventional and an alternative notion has been going on. In the most recent years, conventional farmers have started converting in great numbers, and presently farmers converted from conventional production constitute an increasing majority compared to idealistic pioneers.

As amalgamation carries on, it can be concluded that the number of organic farmers is increasing, while the number of conventional farmers is decreasing dramatically. So far, it is not a happy ending as far as sustainability. The converted farmers and the organic pioneers are struggling for control of the interpretation of the concept of organic farming [Michelsen & Koelster, 1998]. Nevertheless, the predominant notion of agriculture has been seriously influenced by the discourse about sustainability. The conventional farmers' associations have been influenced too, now seeking to interpret sustainability into their professional standards and showing respect for and interest in the organic farmers who earn a reasonable income due to higher market prices. A survey has exposed that conventional milk farms produced 39 per cent of production value as value added while comparable
organic farms produced 50 per cent value added due to lower costs and higher output prices [Anonymous, 1997; Ingemann, 1998].

Table 4: Organic farming in Denmark 1980 - 1999

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of farms</th>
<th>Percentage of farmland</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>150</td>
<td>0.1</td>
</tr>
<tr>
<td>1988</td>
<td>220</td>
<td>0.2</td>
</tr>
<tr>
<td>1990</td>
<td>520</td>
<td>0.4</td>
</tr>
<tr>
<td>1999</td>
<td>3,300</td>
<td>5.5</td>
</tr>
</tbody>
</table>

[Anonymous 1991; Anonymous 1999]
Part 2. The general framework

The purpose of this part is to briefly present a framework to conceptualise the political economy of the evolution presented in part 1.

Consumers, voters, manpower, etc., are gathered in the same persons who are unable to distinguish between economic and political actions. Something must tie the actions together and form a common basis for human actions individually as well as socially. This ‘something’ will here be conceptualised as notions.

A society has, in any historical era, specific aims and related strategies. The latter forms the basis of the current options taken among various opportunities that occurs through time. An example is the evolution of Sweden and Denmark around 1870 to the turn of the century. Both were peasant societies in economic and social crisis. Nevertheless, the strategies chosen to meet the crisis were different. The Danes chose livestock production and high quality foods, while the Swedes chose industrialisation. These different choices had different consequences in the following decades and caused different trajectories. The economic similarity in the two nations ended, and subsequent options differed.

It is obvious that iron ore was present in Sweden but not in Denmark. It could also be mentioned, that the Swedish cream separator played a certain role in the foundation of Danish co-operative dairies. Such arguments brings along simple, materialistic explanations. On the other hand these facts can
only to some extent do as real explanations because one for instance could ask, what would prevent the Danes from importing iron ore, if they would like to work it up for instance to cream separators? Simultaneously the iron ore in Sweden didn’t by it self turn into cream separators. Of necessity certain ideas of the potential use of iron should be present in Sweden as well as ideas of how this use could be transformed to and organised as economic activity. In just the same way Danes should have ideas about how to establish and organise the production, working up, and marketing of livestock foods and how to do so without immediate financial means. In general, it is argued here, that material conditions are necessary but not sufficient; concepts and notions must be involved too to understand the current evolution.

One way to understand the functioning of a notion is to look upon a community as constituted by a common framework of concepts. Such a framework implies that the members understand each other and are able to collaborate, whether the community is a family, a firm, a local society, a nation, or a group of nations. This framework must lay the foundation of a rationality. In social sciences in general and economics in particular, it is often assumed that people come to decisions based on calculations of what will serve their personal benefit - which means their financial interest - best. Anyway, only a few people make daily calculations previous to every day or even more serious decisions. They make their decisions based on notions telling them what is right and what is wrong, what is adequate, legitimate, etc. The notions then instruct individuals as well as groups how to act. In a social sense, the notions then contain a framework for comprehension, action and communication enabling the members to collaborate in the same direction without legal commands or prohibition. At the same time, the notion ensures that the legal frame is understood and obeyed while the members realise the advantages of and necessity to interpret them according to the intentions. In
other words, notions can be seen as a frame of interpretation in which experiences and values constitute a certain rationality. The notion must constitute relevant aims and means as well as a strategy of evolution - that is how to attain the aims. Hereby, notions form the basis of choice and will, in this sense, guide the direction of decisions and actions, but of course interact with material conditions and social mechanisms such as supply and demand. Figure 1 represents a simple model of the elements that affect notions and the relations to actions.

Various groups are able to act in economic as well as political sense to keep their social position and, in this context, also use the notion as a tool to state
their legitimacy. In this way, the social notions and institutions become preserving. On the other hand, it's impossible to ignore the influence from material conditions. The exposition of material conditions based on predominant notions can be too conflicting, which will be revealed when new notions create a new social evolution giving rise to actions that modify the material conditions influenced by former notions. This implies that the predominant notion currently will meet competing notions. Institutions reproducing the predominant notion will then be the target of different interest groups' attempts to influence the notion. So competition among different notions is a relevant indication of evolutionary change. Is the predominant notion stable or unstable - are competing notions able to take possession of important social institutions or not?

Thus, the concept of notions creates a more nuanced and dynamic notion of social change; besides, it enables us to reveal the common basis of economic and political actions. The experience of history shows that no civilisation - how magnificent and dominating it may have been - evolves as a millennium in the biblical sense. Every society contains conditions for its function, but it bears the seeds of its own transformation and then destruction. So a society contains the possibility of its own organic transformation and disintegration. Notions evolve and are replaced by new notions giving rise to new actions, when the historical conditions are present.
Part 3. Provisional conclusions

The final part is an attempt to sum up a provisional conclusion and from that indicate a way out, a trajectory of satiety.

The two following diagrams represent an attempt to line up highlights of the political economic evolution of Danish agriculture in the last century. The first diagram shows the social problems and actions taken by the dominant farmers' associations. The second diagram shows how new movements in recent decades take other actions and influence the evolution. If we only study actions taken by the dominant associations, it is impossible to catch the evolutionary tendencies.

The starting point was a social and economic crisis in the 1870s. This crisis appeared in an era marked by scarce material means and unfulfilled needs - to some extent also literally an era of starvation. The trajectory chosen to meet the challenge was based upon a social notion of how to create social solutions with very limited means. The social - one might even say sustainable - notion of that time is obvious in the Koege-resolution. Although the lowest social groups at that time observed that other groups were relatively well-off, the former didn't claim transfers from the latter or transfers at the expense of future generations, but only the necessary prerequisites to provide for themselves and their families through their own efforts. In the procurements of these prerequisites, the farmers, land workers, and their supporters used various political and economic means. However, looking at the three pictures outlined in part 1 and scheduled in the first diagram, it is remarkable that the actions taken are not only economic or political; not related only to market or
state. They represent a plurality of economic and political dimensions by use of interactions between institutions as market and state, but also by use of institutions that cannot be categorised as market or state. The new institutions made use of an interplay between these and market and state. The creation of such institutions was made possible through a common notion guiding the actions, and the involvement of these possibilities into the notions was made possible when the mind-workers framed the literate pictures and concepts of what is important and what is possible. Not that the mind-workers could work miracles; the mind-workers were and are, of course, limited by the presence of adequate material and historical conditions. Such conditions were, however, present in the late 19th century.

The resulting change of trajectory implied that the Danish farmers and their supporters succeeded in bringing about a prosperous and relatively stable era that lasted until the 1950s.
<table>
<thead>
<tr>
<th>Year</th>
<th>Objectives</th>
<th>Mode of solution</th>
<th>Way of solution</th>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>Peasant</td>
<td>Production in</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>small farms of</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>organic farming</td>
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<tr>
<td>1900</td>
<td>Industrial</td>
<td>Technological</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>innovation</td>
<td></td>
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<tr>
<td>2000</td>
<td>Post-Industrial</td>
<td>Market</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2050</td>
<td>Post-Industrial</td>
<td>Market</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diagram: Danish agriculture and society
<table>
<thead>
<tr>
<th>Problem facing inspiration</th>
<th>Solution</th>
<th>New institutions</th>
<th>New institutions</th>
<th>Way of solution</th>
<th>Problem solving</th>
<th>Extremal</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>Subsidies and support for organic farming</td>
<td>Enriched in the context of the farmer</td>
<td>Associated with food production</td>
<td>Innovative business models</td>
<td>Enriched in the context of organic farming</td>
<td>Potential for success</td>
<td>Agribusiness 2</td>
</tr>
</tbody>
</table>
The agricultural crisis in the 1950s was in many respects quite different from that in the 1870s and 1880s. The Danish economy still depended on food production; especially for export. On the other hand, other productive sectors, especially industrial manufacturing and services, had emerged and taken over an increasing part of the economic activity in the nation. Thus, other sections were able gradually to enjoy the fruits of the industrial society, while the farmers found themselves caught in an income squeeze. The social notion as expressed in the Koege-resolution was not brought up to date and was suddenly superseded by a more self-centred, less social notion in the 1950s. The latter entailed claims on other sections while the pay-level of skilled workers was advanced as a moral standard. If farmers couldn’t obtain that level through the market, it was seen as the social responsibility of other groups to make up the difference. The farmers’ associations were able to use their economic and political power to persuade the government to establish a complex policy system to support Danish agriculture, primarily through subsidies. Collaboration between associations and government through mixed administration was already introduced in the late 19th century and further developed in the 1950s. However, the policy system in the 1950s represented an innovation to collaboration: The negotiated economy was introduced and institutionalised. In this system, the government played the role as a court of appeals when the outcome on the market wasn’t satisfactory to the farmers [Hernes, 1978].

In the notion of the 1880s, it was the aim to make it possible for every man to provide for himself and his family through his own means. In the 1950s, it became the aim for every man to raise his standards of living, as a minimum to the level of skilled workers without any serious reservations as to the means. Here, the notion of the effective farm was also introduced. To push
farmers into other trades would be justified by referring to an expected increase in their standard of living, while the remaining farmers would increase their income by commanding an increasing amount of capital goods and by introducing various industrial inputs, such as chemicals, into farming. These means should enable them to increase production and thus their income.

The argument that the rejected farmers would be secured a certain income level was at that time correct, while manufacturing and services needed labour power. The other part - stating that increased production would secure higher income to farmers was and is somehow more troublesome in acknowledgement of the mechanics of the treadmill and cannibalism [Cochrane, 1979]. Briefly, the treadmill is caused by the limits of the human capacity to digest. In the rich part of the world, most people are satiated with foods and even catch diseases due to overeating [WHO, 1998]. Simultaneously, the population increase in these countries is almost zero. Under these circumstances, effective demand is practically inelastic⁶. If supplies then are increasing, the price level must decrease. So when farmers try to maintain their income by increasing their output, the price level must decrease, and farmers then further increase output, etc. Cannibalism is caused by the fact that farmland is a necessary but, in absolute terms, limited factor of production in agriculture. When a farmer wants to increase production, his only possibility is to swallow his neighbour’s farm. These mechanisms have been obvious since the 1950s and have led to production of standard goods by industrial methods, doubling production and halving the aggregated GFI. This is further obvious when examining value added in Danish agriculture at farm

⁶ There are needs in the underdeveloped part of the world, but these needs are not transformed into effective demand on the market, due to the lack of spending power in these countries.
as well as processing level. At the same time, the industrial mode has entailed a dramatic increase in the capital intensity on farms and a dramatic decrease in farmers' equity. That means increasing dependence on industrial manufacturers and financial institutions, as well as dependence upon governmental subsidies. The result has been surplus production, causing, among other things, serious external effects on environment and animal welfare [Ingemann, 1998].

By maintaining the notion of the effective farm, it has, until recently, been possible to neglect the limits of the human capacity to digest and the treadmill. However, the anomaly between the notion and reality might have gone too far. New notions of sustainability have exposed this anomaly and tried to state a constructive alternative. The organic farming movements catch the eye, even though they have not yet shown the same power and evolved as comprehensively as the co-operatives and parcel out communities a century ago. Once again, we are facing collaborative organisations that are not created by market or state, but by a notion of a better life in a better society. The movements have been able to use market and state in addition to various kinds of collaboration. Among other means the organic pioneers and related associations have collaborated with existing institutions, e.g., government and public administration, and gradually changed the notions on which these institutions are based. They have also changed the attitude of conventional farmers one of the reasons being the ability of the former to earn money through an increasing value added. Simultaneously, the Danish farmers have, for instance the last couple of years, experienced decreasing market potentials for Danish bacon in the UK as a result of British consumers' priority on animal-friendly farming methods.
In the outlined evolution notions and political power have had a marked influence on the conditions under which the market functions. Governmental institutions have been used as a board of appeals *ex post* when the resulting allocation by the market was not acceptable to the farmers, and *ex ante* combined efforts have been made to arrange the allocative outcome by means of managing operations of political as well as economic institutions. Besides, notions have influenced the consumers’ preferences and then commercial evolution as seen in relation to organic foods.

Finally, looking at the future, it is crucial to bear in mind that the material and historical conditions in favour of a sustainable trajectory, to some degree, are present in the rich part of the world. First, the environmental impacts and risks of industrial technology in farming and other sectors have been exposed; for instance pesticides in drinking water and serious risks of *zoonoses* in foods. Second, the satiety of the post-industrial society has given rise, in recent years, to an evolution of the consumers’ notion of quality. This evolution implies an interest in the product in itself and critical interest in the production process; the latter interest relates to potential side effects to human health, environment and animal welfare [Ingemann, 1999b]. Third, the satiety brings about a basis on which individuals as well as social groups might experience that human happiness is not founded on consuming one more piece of cake - or to put it in the neo-classical way: Marginal utility is decreasing and might be negative.

How promising the present evolutionary tendencies might seem, this is not a simple happy ending - and might never be, because the sustainable society supposedly isn’t a millennium in the biblical sense either. Anyway, evolution continues as a conflict between various notions of what is good and what is bad.
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