

Organic Agriculture in Denmark

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1 Agriculture in Denmark

Denmark is a comparatively small country with a population of only five million. It has a large farming sector and a long tradition of producing and processing farm produce. 2.7 million hectares or sixty-three percent of Denmark's land area is cultivated farmland. See <http://www.ddl.dk> under *Landøkonomik oversigt* for more information on agriculture in Denmark.

Danish farmers produce both a wide range and a large quantity of agricultural products, enough to feed more than fifteen million people. This means that large quantities of Danish farm products can be exported.

Pork and dairy products are the most important export products for the farming sector, and more than two thirds of the total farmed area in Denmark is used for growing feed for cows and pigs.

2 Organic Farming: Basic Principles

Organic production differs from conventional production in that it is based on principles of:

- preserving the fertility of the soil
- avoiding all forms of pollution
- producing goods of optimum nutritional quality
- utilising local resources and labour in a closed cycle
- reducing the use of non-renewable resources to a minimum
- providing domestic animals with good living conditions
- ensuring that the farmer can generate sufficient income from his farm.

3 The Development of Organic Farming in Denmark

The first Danish organic farms started their work in the late 70's. The Danish organic movement was organised in 1981 with the foundation of the *Danish Organisation for Organic Farming (LØJ)*. The organisation is made up of farmers, consumers and processors. It promotes organic farming in Denmark. It has its own growing and breeding regulations and an independent inspection. Importantly, the consumers are able to participate in describing the framework and developing laws of organic production.

Logo of LØJ:



LØJ has its own set of rules, but it was extensively involved in the formulation of the Danish national organic farming laws (the first national law on organic farming and later on the Action Plan). The first national law on organic farming, passed in 1987, was



the „Act on Organic Farming“ or *Lov om økologisk jordbrugsproduktion*.LØJ has also played an active role in the preparation of common European laws.

The *Organic Agricultural School* was founded in the early 1980s to educate organic farmers and is also in charge of continuing education for conventional farmers.

The organic pioneers established themselves into co-operatives and founded companies to process and sell organic products. This led to several bankruptcies, and in 1990 all organic milk producers merged into a single dairy co-operative called Dansk Naturmælk. This co-operative has since closed down and MD Foods now accounts for 77 per cent of all organic milk delivered.

A number of small organic dairy plants have however managed to remain in the market and some new ones have emerged. The small dairy plants today export organic cheese and yoghurt.

Organic milk has become a symbol of the organic development. For many consumers it serves as an introduction to the organic market. Twenty percent of the fresh milk sold today in Denmark is organic milk.

Short historical overview:

- 1981 *Danish Association for Organic Farming, LØJ* is founded
Standards for organic farming based on IFOAM basic standards are set
Co-operation with the biggest retail store in Denmark for the sale of organic vegetables is set up
1982 Organic agricultural college, The Organic Agricultural School is established
1985 First organic advisors start working
- 1987 national standards for organic farming are established (*Lov om økologisk jordbrugsproduktion, nr.363 af 10. juni 1987*
the text of the newest versions regulating organic farming is available at <http://www.ecoweb.dk/english/tal/2ba.htm>
and for processing, trade and import of organic products at <ftp://ftp.ecoweb.dk/dokumenter/order-263-eng.pdf>)
State inspection and certification scheme are introduced
Economic support for conversion is introduced
- 1993 General economical support for organic farming is established
- 1993 The consumer price in the biggest retail-store chain is lowered
- 1995 First Actionplan for organic farming is introduced
- 1996 Increased support to plant producers
- 1998 *Centre for Organic Agriculture* is founded
- 1999 Second Actionplan
(http://www.okologiens-hus.dk/English%20version/body_english%20version.html)
for Organic farming is introduced.



4 Organic Agriculture Organisations

The *Centre for Organic Agriculture* (<http://www.okologiens-hus.dk>) is a common office for several organisations and has existed in this form since January 1998.



The organisations are:

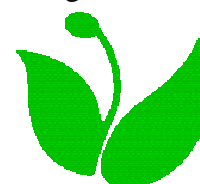
- The *Danish Association for Organic Farming – Landsforeningen Økologisk Jordbrug, LØJ* (<http://www.okologiens-hus.dk>)

Logo of LØJ



- The *Organic Service Centre – Økologisk Landcenter, ØLC* (<http://www.okologiens-hus.dk>)

Logo of ØLC



- The Association of Organic and Biodynamic Plant Producers and Processors in Denmark (E-Mail: info@okologiens-hus.dk)
- The Association of Organic and Biodynamic Egg and Poultry Producers in Denmark (E-Mail: info@okologiens-hus.dk)
- The Association of Organic Meat Producers in Denmark (E-Mail: info@okologiens-hus.dk)
- The Association of Organic and Biodynamic Milk Producers in Denmark (E-Mail: info@okologiens-hus.dk)
- Organic Fruit, Berries and Vegetables Growers (E-Mail: info@okologiens-hus.dk)
- The *Biodynamic association and Demeter association - Foreningen for Biodynamisk Jordbrug, FBJ og Demeterforbundet* (<http://www.ecoweb.dk/biodyn/index.html>)



5 Statistics on the Growth of Organic Farms

Table 1 shows the development of the agricultural area under organic management and the rapid increase in the number of farms.



Fibiger Nørfelt, Tomas: Organic Agriculture in Denmark
<http://www.organic-europe.net>, 21.6.2000
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Table 1 (part 1): Development in area and the number of certified organic farms (for further details see <http://www.plantedir.dk/pdf/stati99.pdf>)

Year	1988	1989	1990	1991	1992	1993
Number of farms	219	401	523	672	675	640
Hectares	5,881	9,554	11,581	17,963	18,653	20,090
Hectares under conversion	2,330	5,565	7,974	10,477	10,446	16,759

Table 1 (part 2): Development in area and the number of certified organic farms (for further details see <http://www.plantedir.dk/pdf/stati99.pdf>)

Year	1994	1995	1996	1997	1998	1999*
Number of farms	677	1,050	1,166	1,617	2,228	3,099
Hectares	21,145	40,884	46,171	64,366	99,163	146,685
Hectares under conversion	16,387	17,032	20,193	37,000	44,102	60,232

Source: Økoguide 1999; *Landbrugets Radgivningscenter 2000

The 99.163 ha converted or under conversion in 1998 made up 3,6 percent of the total agricultural area in Denmark. In 1999 this figure was 5.5 percent.

The Danish farming organisations' joint advisory centre, *The Danish Agricultural Advisory Centre*, has prepared a prognosis for the rate of conversion to organic farming up until 2002. They forecast that the total area (converted and under conversion) will increase from the present 180,000 hectares to just under 300,000 hectares. This will lead to an increase in production of about 80 percent.

6 Regional Distribution, Land Use and Animal Production

The biggest share of organic farms at the total number of farms in Denmark can be found in Jutland (4.6 percent of all farms), followed by Zealand / Sjaelland (1.9 percent) and Funen/ Fyn (one percent) (map see: <http://www.sunsite.informatik.rwth-aachen.de/Maps/europe/Denmark.jpg>).

The development of the mix of crops grown in Danish organic farms within the conversion period and the status in the converted farms shows the overall importance of green manure and fodder growing as well as the bigger diversity of crops (table 2).



Table 2: Plant Production in Organic Farms 1999

	Percentage of organic farms		
	1 st year of conversion	2 nd year of conversion	Fully converted
Cereals	42.3	25.5	28.0
Legumes	4.7	1.5	2.3
Root crops	0.2	0.4	1.9
Seeds for industrial use	0.7	0.6	1.4
Seeds for sowing	0.6	0.1	0.3
Grass crops	46.2	66.0	59.2
Horticultural crops	0.2	0.5	2.1
Other crops	5.1	5.5	4.8

Source: Plantedirektoratet

Almost one third of the organic holdings have dairy cattle and 21 percent keep sheep (table 3). Almost one fifth of the organic farms does not keep animals at all.

Table 3: Animal Husbandry in organic farms 1998

	Number of organic farms	Percentage
Total number of organic farms	2,228	
Farms with dairy cows	689	31
Suckling cows	533	24
Pigs	448	20
Sheep	469	21
Hens	570	25
Organic farms with animals	1,810	81
without animals	418	19

Source: Based on information from Denmark's Statistik and Plantedirektoratet

7 Inspection and Certification

Denmark is exceptional in having an official set of regulations and a single unique symbol for organic products, and also in that the state undertakes inspections.

All organic farms in Denmark are visited at least once a year by an inspector from the *Plantedirektoratet - Plant Directorate* (<http://www.plantedir.dk>). The Plant Directorate is an organisation within the Ministry of Food, Agriculture and Fisheries. The Plant Directorate certifies and inspects all primary producers. It has several offices across Denmark. The visit takes place when crops are still in the fields so that the inspectors can verify that everything is up to standard. In addition to the agreed visits, each year the inspectors make unannounced visits to 25 per cent of organic farms.



Fibiger Nørfelt, Tomas: Organic Agriculture in Denmark
<http://www.organic-europe.net>, 21.6.2000
 © Stiftung Ökologie & Landbau (SÖL), Bad Dürkheim, Germany, 2000.

Danish state seal for organic products:



8 The Role of the Government and the Council on Organic Agriculture and Food

There has been for several years a collaboration between the organic farmers and the Danish authorities, who have supported organic agriculture in several ways.

Since 1987 there has been a law on organic agricultural production. This law governs the state control label, funding to support farm conversion, research and market development.

An important step has been the establishment of the *Council on Organic Food and Agriculture*. The council serves as a platform for consensus building on organic policies and has been a catalyst for initiatives in every area of organic food production. It has representatives from the state, the organic farmers' organisations and the conventional farmers' organisations, the labour organisations and the consumers.

8.1 The First Actionplan for Organic Agriculture

In 1995 the Council on Organic Food and Agriculture developed an „Actionplan for Organic Farming“ with 65 recommendations to the Minister of Agriculture, Food and Fishery (<http://www.fvm.dk/>; <http://www.agriculture.dk/>) to encourage organic farming in Denmark.

The first Actionplan served as a base for much of the political work in the following years.

8.2 Conversion to Organic Farming

In Denmark we have to convert the whole farm. Furthermore, there is a limit on the import of organic manure that does not come from organic farms. As a result, dairy farms are more easily converted than those with plant production and pig production. Marketing conditions for milk have also been more favourable. To have a more balanced conversion it was recommended in the first actionplan to give special incentives on plant production and pig production.

The funding to organic farmers is now as shown in table 4.



Table 4: Conversion aids for organic farms

	Danish Crowns / Euro				
	Year 1	Year 2	Year 3	Year 4	Year 5
Organic production	600 / 81	600 / 81	600 / 81	600 / 81	600 / 81
Conversion	450 / 60.5	450 / 60.5			
No milkproduction	2,000 / 269	2,000 / 269	1,200 / 161	500 / 67	500 / 67
Pigs, no milkproduction			2,000 / 269	2,000 / 269	2,000 / 269

Source: Strukturdirektoratet 1999

Farms with pig production receive at most 2,000 Danish crowns (269 Euro) per hectare. The amounts are restricted. With the EU hectare funding and the organic funding the maximum amount per farm can as a maximum be 5,000 Danish crowns (671 Euro).

The state also supports marketing, research and development of organic farming. In the early years approximately two thirds of the funding for organic agriculture went towards:

- information for consumers and farmers
- education and exhibitions
- advisory/ extension services to farmers
- research and field testing
- demonstration farms
- product development

Though farm conversion was slow during these early years, this investment laid the foundation for more conversions in later years.

8.3 The Second Actionplan

In 1999 a second Actionplan „Developments in Organic Farming” was developed <http://147.29.40.119/publika/actionplan%2Di%2Duk/forside.htm>;
<http://www.okologiens-hus.dk/English%20version/english%20version.html>.

The new Actionplan deals with issues of:

- Consumption and sales (<http://www.strukdir.dk/publika/Actionplan-II-UK/kap4.htm>)
- Primary production (<http://www.strukdir.dk/publika/Actionplan-II-UK/kap5.htm>)
- Quality and health (<http://www.strukdir.dk/publika/Actionplan-II-UK/kap6.htm>)
- Adjusting of the standards
- Export (<http://www.strukdir.dk/publika/Actionplan-II-UK/kap7.htm>)
- Institutions and commercial kitchens (<http://www.strukdir.dk/publika/Actionplan-II-UK/ACTINDEX.htm>)



- The Environment (<http://www.strukdir.dk/publika/Actionplan-II-UK/ACTINDEX.htm>)
- Health and welfare of livestock (<http://www.strukdir.dk/publika/Actionplan-II-UK/ACTINDEX.htm>)
- Research and development (<http://www.strukdir.dk/publika/Actionplan-II-UK/ACTINDEX.htm>)
- Administrative streamlining (<http://www.strukdir.dk/publika/Actionplan-II-UK/ACTINDEX.htm>)
- EU and Agenda 2000

A further aim is to have 10 percent organic farmers in 2005 and 200,000 hectares more of agricultural land under organic management.

9 Implementation of Agenda 2000 and Organic Farming

The implementation of Agenda 2000 in Denmark has unfortunately not given any significant boost to organic farming. This was a result of several factors. First, organic farming is already given a high priority in Denmark's rural districts program, agri-environment program and in the guidelines for supplemental milk quotas. This was already the case before Agenda 2000. Second, Denmark's budget for the Rural Districts program was reduced by 49 million Danish crowns (6.6 million Euro) as a result of the agricultural reform of the EU. Third, Denmark chose not to use the new national envelopes (which were established as compensation for reduced prices) to further promote organic farming. Positive effects from Agenda 2000 on organic conversion will only be a result of indirect motivation caused by the active use of cross compliance in Denmark. The degree to which the use of cross compliance will prompt to conversion cannot be measured.

10 Marketing

In 1993 FDB, the largest retail group in the country, reached an agreement with several companies producing organic food to both reduce prices and simultaneously increase the marketing of organic products. Within eighteen months, a wide range of organic products could be found on the shelves of 95 percent of the food retail shops in the country. Within a few years there was a substantial increase in sales of organic produce. Today, more than 90 percent of sales on the home market take place via the retail sector, and organic produce accounts for approximately four percent of the total turnover of food produce.

The prospects for organic foods are promising and, within Europe, Denmark has the greatest experience in producing and selling organic produce (table 5). As mentioned previously, this is attributable to a variety of conditions - innovation in farming,



political objectives, market-oriented retail chains and changes in consumer behaviour have all been important factors.

Table 5: 1999 Market share of organic food in Denmark

Product	Percentage
Milk	22
Cheese	2
Butter	3
Curdled milk	8
Eggs	13
Carrots	11
Potatoes	7
Onions	4
Wheat flour	11
Oat grains	18
Wholemeal flour	22
Pork	1
Beef	2

Source: Organic Service Center

At present, no official body in Denmark collects data on the export and import of organic products. Companies selling and buying organic products are not willing to divulge their market data. It is therefore hard to paint a precise picture of the Danish situation. The export of organic products has increased considerably and so has the import of foreign organic products (see <http://www.organic-export.dk>). Denmark has the largest per capita consumption of organic products within Europe and has probably the largest organic producer in Europe, MD Foods, a company that in 1999/2000 will produce approximately 270 million kilograms of organic milk. The retail group, FDB, expects that the turnover of organic products in percent will increase from 2.8 percent in 1996 to 8.2 percent in 2000 and 10.9 percent in 2001 in their domestic shops.

Concerning the Danish consumer one may say that in average she /he is:

- is well educated and
- environmentally conscious
- is focussed on health
- can afford to spend a larger part of their budget on food and statistically,
- 75 percent have bought organic food during the last six months
- One to two percent always buy organic
- Ten percent use more than ten percent of their household budget on organic food
- 24 percent use two to ten percent of organic food



- 41 percent use less than 2.5 percent of organic food
- 25 percent do never buy organic food

11 Training

Denmark has the oldest organic agricultural college in Europe The Organic Agricultural School (<http://www.oekoskolen.dk>), established in 1982. Twenty to thirty agricultural students graduate each year after a three and a half year long training consisting of both theoretical and practical training. Other agricultural colleges in Denmark offer organic courses and training. Agricultural colleges, agricultural advisers and farmers' associations offer many in-service courses for organic farmers. These are typically one to three days long and are in various fields of organic farming. The supply of these in-service courses is higher than the actual demand.

12 Advisory System

Denmark has a very comprehensive and well-organised agriculture advisory system. The Danish farming organisations have a joint advisory centre, *The Danish Agricultural Advisory Centre - Landbrugets Radgivingscenter* (<http://www.lr.dk/oekologi>).

Logo of the Landbrugets Radgivingscenter:



Today 150 advisers (the equivalent of 50 full-time jobs) provide advice on organic farming. The organic advisers supply information to conventional farmers who are gradually being inspired by organic methods of production. An example of this is the increasing use of clover and grass on conventional farms. Advice on organic farming is often supplied jointly by a crop adviser and a cattle adviser as field and livestock are inseparably bound up with organic production.

13 Research

Many of the concerns of farming today such as consideration of consideration of the environment and nature, animal welfare, product quality and health are all fundamental aspects of organic farming. The promotion of organic farming has been part of Danish government policy for several years. A major initiative in this respect has been the establishment of the *Danish Research Centre of Organic Farming (DARCOF)*; <http://www.agrsci.dk/foejo/DARCOF.html> in 1996.

Logo of DARCOF:



Fibiger Nørfelt, Tomas: Organic Agriculture in Denmark
<http://www.organic-europe.net>, 21.6.2000
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DARCOF is a „centre without walls“ where scientists remain in their own environments but work across institutions. DARCOF co-ordinates the work of 15 institutes with approximately 100 scientists and 40 to 50 ongoing projects. The remit of DARCOF is to initiate and co-ordinate Danish research in organic farming. It has conducted an evaluation of Danish research in organic farming (see <http://www.147.29.40.119/publika/evaluation%2Dorganic/eval0003.htm>).

Furthermore, the *Technical University of Denmark (DTU; <http://www.its.dtu.dk>)* has a *Department of Technology and Social Sciences – Institut for Teknologi og Samfund, ITS (<http://www.its.dtu.dk>)* which contains the *Institute for Research and Education in the Processing of Organic Food (<http://www.its.dtu.dk/proj/okopro/index.htm>)*. The education is primarily for students at the university. Members of the Institute have external counselling tasks. The Institute co-ordinates a web of consultants in the organic food processing sector. It is a member of IFOAM.



Logo of the Eco Research Team at IST:

14 Challenges and Outlook

Organic farming will undoubtedly continue to expand in Denmark. The consumption of organic products will grow as a consequence of the modern lifestyle, consumer behaviour and problems in conventional farming and the processing and food industry.

Consumers, politicians, companies and farmers are all looking for new ways to secure a more sustainable development in Denmark. Organic farming is playing a vital role in this context. The challenge is to maintain the integrity and the quality of the organic products, to develop organic farming further and to get conventional processors involved in the processing and promotion of organic products. In this respect, informing the consumer and promoting the export markets are critical.

15 Interesting Internet Sites

- <http://www.ecoweb.dk> news and a lot of good links (in Danish):
- <http://www.okologiens-hus.dk> homepage of Centre for Organic Agriculture
- http://www.ddl.dk/information/la-Oek-oversigt/eng_lo99.pdf (in English)



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<http://www.organic-europe.net>, 21.6.2000
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- www.mst.dk/fagomr/02000000.htm cost-benefit analysis on no/reducing pesticides in Denmark and 100 percent conversion to organic farming

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