

A close-up photograph of several green wheat stalks, showing the developing grain heads. The background is a soft, out-of-focus green field.

Organic Farming – structure, production and nature management

“Nature Quality in Organic Farming”

- is a research project connected to the Danish Research Centre for Organic Farming. The aim has been to develop new methods for characterising nature content on organic farms, to investigate how nature elements are managed on different farms, and to discuss development strategies and ways to communicate this knowledge to different stakeholders. This following is a presentation of the results that emerged from an extensive interview survey with 347 organic farmers from 2002-03.

Organic farming – structure, production and nature management

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The Danish Research Centre for Organic Farming (DARCOF) was established in 1995 as a so-called "centre without walls" where the actual research is performed in interdisciplinary collaboration between the participating research groups.

The remit of DARCOF is to coordinate research for organic farming, with a view to achieving optimum benefit from the allocated resources. Its aim is to elucidate the ideas and problems faced in organic farming through the promotion of high quality research of international standard. Further information is available online at www.darcof.dk

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Organic farming and nature management

In Denmark, agricultural production and area use play an important role for the management of our common nature and landscapes. For many years organic farming has had as its' objective to promote nature values in relation to the organic production. Within the framework of the current regulations and subsidies the farmer is the primary decision maker when it comes to arable land. Hence, the farmer's attitudes, knowledge and prioritising of nature have decisive importance for the type of nature management applied on the single farm. All of these considerations form the background for the project "Nature Quality in Organic Farming".

Contents

The focus here is on an interview survey that was conducted in order to be able to describe organic farming practises and nature management on farm level in different parts of Denmark. In connection with the interviews we promised to report back to the participating farmers. Thus, the focus of the following is on the results from the interview survey, which provide a snapshot of reality as it appeared for farmers and organic farming in 2001.

-with many thanks!

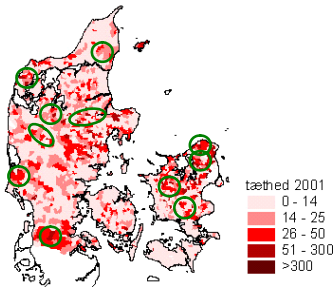
The present description is aimed at the farmers who participated in the interview survey and without whose help and good will this project would not have been realized.



Which study areas?

Organic farms are scattered over most of the country, although with some regional concentration in South West Jutland and the metropolitan area. At the same time there are relatively large areas with out organic farms, e.g. more than one third of all parishes in Denmark are void of organic farms.

Number of organic farms per 100 km², densities in 2001



The survey was conducted in 2002-03 in 11 study areas in Denmark: Løgumkloster, Varde, Herning, Skive, Thy, Hjallerup and Randers in Jutland and Holbæk, Haslev, Slangerup and Græsted-Gilleleje on Sealand (see also map on p. 15). All areas had densities of organic farms above the national average (8.1 organic farms per 100 km² in 2001) and represented a wide range of landscapes, farms and farmer types.

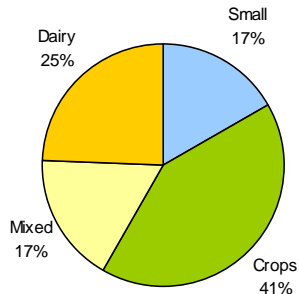
Who participated?

A total of 347 organic farmers participated in the survey. This equals approx. 10% of all organic farmers in Denmark in 2001. In all, 75% of the organic farmers in the chosen parishes participated.

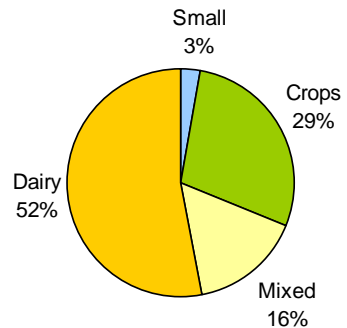
Farm types and specialisation

The distribution of the participating farms resembled the national distribution. Arable farmers dominated in numbers whereas dairy farms dominated area wise.

Share of farms

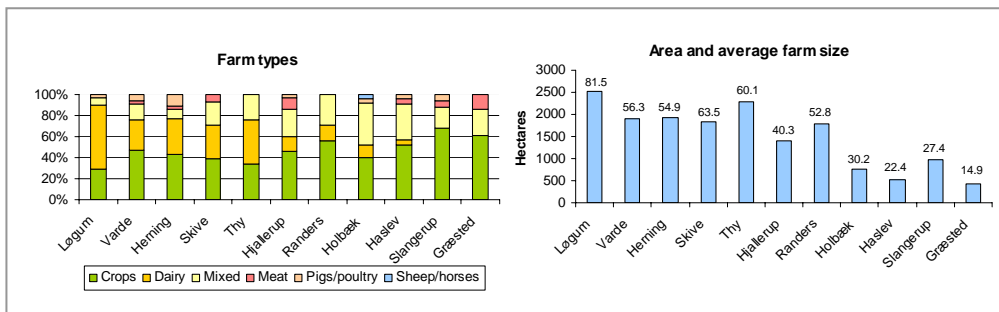


Share of area



The degree of specialisation followed the expected pattern with a dominance of livestock farms in Jutland and arable farms on the islands. In spite of this regional

specialisation, some areas were not dominated by one specific farm type. For instance, there was no regional concentration of farms with pigs, poultry or cattle.



The organic farmers

More than one third of the organic farmers characterised themselves as full-time farmers (primarily dairy producers), whereas the remaining approx. two-thirds saw themselves as part-time and hobby farmers, respectively (primarily mixed and arable farms). Only 5% of the farms were run full-time by both the farmer and his/her spouse.

-background

A total of 75% of the farmers grew up in the countryside and 61% of these on a farm. One fourth of the participating farmers ran their own or spouse's family farm. The remaining 25% of the farmers came from urban areas and the share of city people was

highest among part-time and hobby farmers. There was a tendency that a larger share of farmers from the western part of Denmark had a farming background than farmers from the eastern part of Denmark. Also the share of farmers having an agricultural college degree was highest in West Denmark.

-years of conventional farming

In 2001, two thirds of the farmers had farmed organically for less than five years and 40% of these had been farming conventionally for more than ten years prior to converting to organic farming. However, the longer farmers had been farming organically the smaller the possibility that they had a conventional background. Approx. 20% of the farmers took up farming as organic farmers.

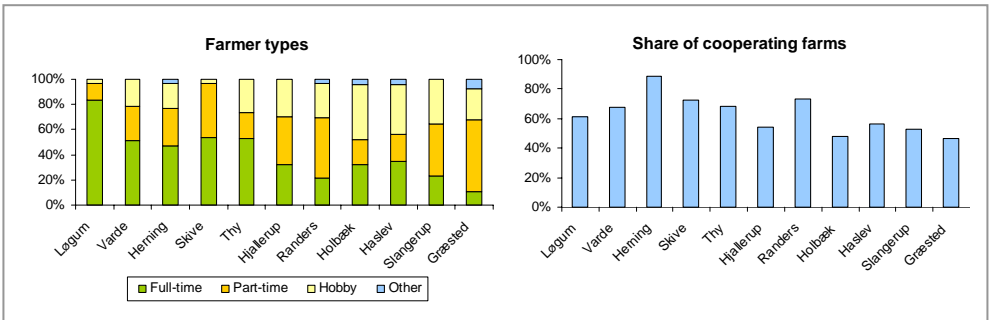
-cooperation among farmers

A total of 63% of the farmers were engaged in some kind of cooperation with other farmers, most frequently informal agreements on exchange of fodder and manure along with sharing machinery. More than one third of

the farmers were involved in several types of cooperation.

-participation in discussion groups

Thirty-eight percent of the organic farmers in the survey participated in discussion groups. Two thirds hereof were full-time farmers.



Crop composition

On more than one third of the farms, the cultivated areas amounted to 85% of the total area. Clover grass and cereals were the dominating crops followed by cereals (silage). The shares of maize and pulses were small, only 2%, in 2001, but their areas have increased with 35-40% during the period 2001 to 2004, measured on all organic farms.



Permanent grasslands

Permanent grasslands, i.e., grasslands that had not been ploughed for at least five years, were found on two thirds of the farms. On average, these fields made out 15% of the total area. Permanent grasslands were more commonly found on mixed farms and dairy farms than on smaller or arable farms.



-and their use

Half of the grasslands had not been ploughed for more than 40 years and had also been continuously grazed. Almost all of these old grasslands were low input areas, i.e., the fields had not been manured and grazing animals had not been fed additional feedstuffs. These low input grasslands are important for nature content. Only a few percent of the grasslands were manured and this mainly took place on the younger grasslands.

Landscape elements

“Landscape element” is a term that covers hedgerows, dikes, ponds, woodlots and plantings of less than one hectare, and grave mounds. There were large variations in presence and density of landscape elements among farms as well as areas.

Types of landscape elements

A total of 89% of the farms had hedgerows and the average lengths of these were 2,221 metres per farm – or 58 m per ha. On average there were 1.4 ponds per farm, but that covers farms without and farms with several ponds. Plantings made out 188 m² per ha on average. In all, the landscape elements covered an average of 3.8% of total farm area, with variations from 0% to 34%.



Localisation of landscape elements

The presence of landscape elements followed different patterns: smaller farms which are often part-time or hobby farms generally had a higher density of all types of elements. But

also natural conditions such as undulation and soil type were of importance. Very few of the farms did not have any landscape elements at all.

Establishing and clearing

From 1997 to 2001 more landscape elements were established than cleared by the organic farmers. Planting of hedgerows predominantly took place on large dairy farms situated in the flat, windy western parts of Denmark. But hedgerows were also established in quite a few areas on Sealand. Ponds and woodlots on the other hand, were predominantly established on mixed and arable farms in the hilly moraine formations of Eastern Denmark. The dairy farms had the highest share of both old and new landscape elements, due to the frequent clearing and replanting of

hedgerows based on production oriented rationales. The majority of the remaining landscape elements were rather old.

Diversified income activities

Structural development, specialisation and enlargement of fields are all part of reality – also for organic farmers. Among the organic farmers who converted in 1997, approx. half of them expanded their farming area and about one third stayed unchanged. It was primarily the large farms that expanded. At the same time many of the organic farmers supplemented their income either through off-farm work or other farm-based activities – or both.

Off-farm work

About half of the farmers' income came from off-farm work while only 27% of the farms were run by a farmer with no off-farm income.



Only 13% of the spouses did not have an off-farm job, while approx. half of the spouses had full time jobs and one fifth had part time jobs. The spouses did not spend much time on farm activities and the time spend mainly went to keeping the accounts.

-differences between the East and West

It was primarily on farms in Eastern Denmark that both farmer and spouse had off-farm work, whereas mainly the spouse had off-farm work on farms in West Denmark.

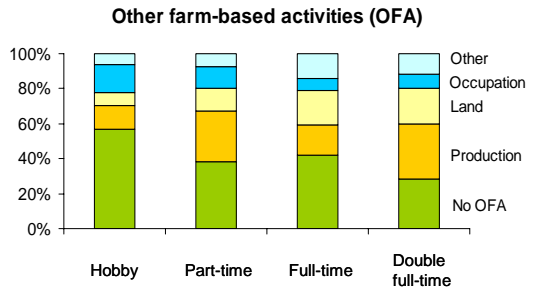
Other farm-based activities

Half of the organic farmers were engaged in other farm-based activities on their farms. Hereof 40% stated that these activities were of some or large economic importance. The activities were related to production, land and occupation or other.

Type of activity	Pct of activities
Farm shop	8
Processing	8
Machine pool	6
Direct sales	15
Total production related	37
Farm tourism	6
Renting out of hunting rights	14
Riding facilities	1
Total land related	21
Trade	5
Day care	6
Occupation/practice	3
Total related to occupation	14
Sales of renewable resources	5
Letting out of buildings	14
Other	10
Total other	29

-large farms have many activities

Farms with two people working full-time had the largest share of other farm-based activities. These were predominantly land and production related, e.g. incomes from renting out hunting rights, direct sales or processing of farm produce.



-farmer types and activities

The hobby farmers did not depend on farm income as both spouses usually had off-farm work. Hence, they were also the ones with the fewest other farm-based activities. The part-time farmers also had off-farm work but 60% had other farm based activities as well. More than half of the part-time farmers stated that the activities were of some or large economic importance to them.

-hunting activities

Only 14% of all the farmers rented out hunting rights on their farms. On a little less than half of the farms, hunting was carried out by the farmers themselves along with

friends and family. Hunting was not carried out at all on approx. one third of all farms. Here the area of Løgumkloster stands out as it contains this investigation's largest share of full time-farmers (43%) and at the same time it is the area with the lowest share of farms with out hunting, namely 69%.

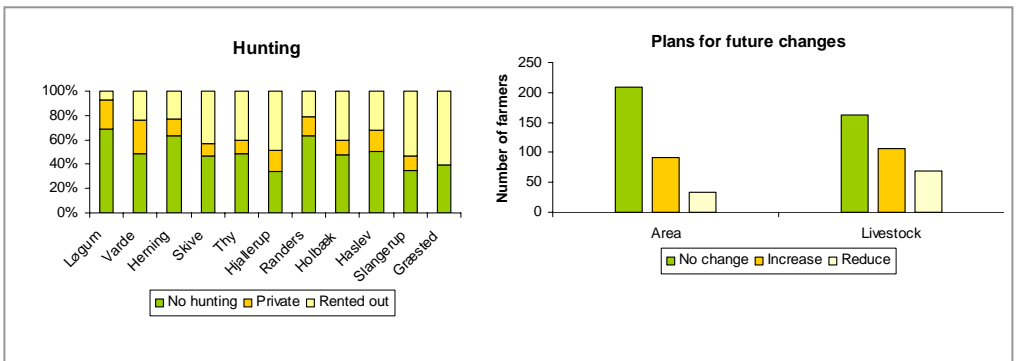
Future strategies

A total of 13% of the organic farmers expressed that they were considering reversion to conventional farming with in a five-year period. In all, 10% wished to cease farming in general and 10% wanted to increase their off-farm work. The main part (66%) of those who considered expansion of land also wanted to increase livestock numbers. Similarly,

the 62% who wished to reduce their land also wanted to reduce livestock numbers. One fifth of the farmers exclusively wanted to increase livestock and another fifth only wanted an area enlargement.

Part time farmers – in or out of organics?

A recurrent discussion concerns whether part-time farmers are leaving the farming business or not. This does not appear to be the case for the organic part-time farmers, who were primarily engaged in mixed and arable farming. Even though most of them get their main income from off-farm jobs, less than 10% of the part-time farmers stated that they considered cessation of farming or reversion to conventional production. This level corresponds to replies from the other farm types.



What is important in the future?

The results show large variations in organic farmers' nature management. It is positive that so many permanent grasslands are run as low input fields. An average density of landscape elements between 2 and 5.5%, depending on farm size, underlines that on some farms there is a still existing need for conservation and establishment of landscape elements. Old landscape elements may have a potential nature value and these elements are predominantly found on larger farms and full time farms. These farms are often involved in structural developments where fields are enlarged, which make it particularly important to add focus on the value of old landscape elements.



Furthermore, it is important to acknowledge that also within organic farming structural development and increases in farm size appears to continue, and that in this process it is important to

conserve habitats for plants and animals in the arable land.



Many new questions...

The results from the survey have opened up for a series of new questions that could not be answered within the framework of this investigation. In addition other project groups were working with other aspects of nature quality on the organic farms. The following is an introduction to some of these aspects and for those who are further interested, references to literature are provided. See also page 15.

Nature content outside the arable land – does organics matter?

Are there higher numbers of plant species in organic hedgerows? Yes, apparently! Investigations in 56 younger organic and conventional hedgerows on dairy farms in Jutland and Sealand showed that there were definitely more plant species in young as well as older organic hedgerows. Irrespective of farming practice it was however mostly common plant species that were found in the hedgerows. Read more about it online:

www.orgprints.org/view/projects/da2c5.html



How do organic farmers perceive “nature”?

Landscape, experiences, impressions and atmosphere were some of the most important aspects of nature mentioned by ten interviewed organic farmers. Biologists look for diversity, continuity and rarity. Differences in views of nature values among different

parties may contain conflicts but also opportunities. See **DARCOF e-news December 2004, no. 4** for in-depth info.



Why are there many organic farmers in one area – and few in another?

Does regional support or proximity to urban markets play a part in how many farmers chose to convert to organic farming in a local area? Is it important that the area already holds organic farmers, that extension agents are positive towards organic farming, or that it is possible to become engaged in co-operations with other organic farmers? Read more about the investigation among ten organic farmers and four extension agents in Northwest Jutland in a coming issue of **DARCOF e-news**.

Why do organic farmers revert to conventional farming?

Because of the economic situation being too tight – and often because of difficult marketing conditions.

But according to seven organic extension agents and nine organic farmers, who had decided or considered to revert to conventional farming, many factors influence the decision-making process. Frequent changes in regulations, lack of expansion possibilities and frustration with having to see your produce sold conventionally all pull towards reversion – whereas having to start using pesticides again pull in the opposite direction. More info about how similar barriers are experienced differently can be found in a coming issue of **DARCOF e-news**.

Can “organic landscapes” enhance living conditions for skylarks and insects?

That is what results from computer simulations of different levels of organic farming in a local area show. Depending on changes

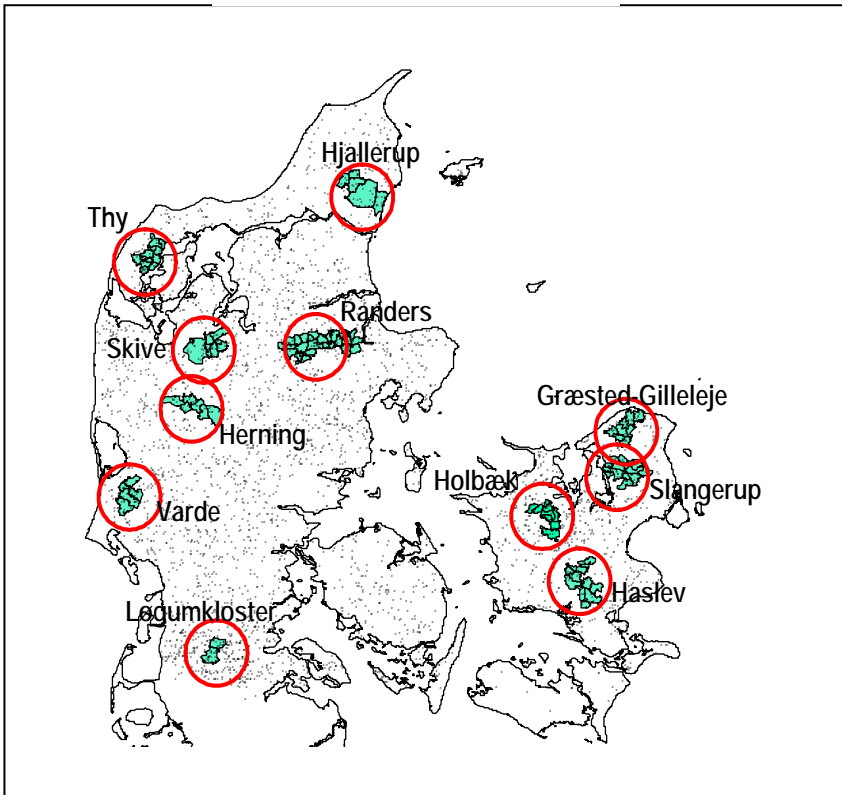
in crop distribution and farming practices there is an overall increase in living conditions for skylarks, spiders and ground beetles. More info on how computer models are used to “predict” advantages of organic farming can be found in a coming issue of **DARCOF e-news**.

What has the project shown?

Organic farmers may have more spiders, skylarks and more diverse hedges than conventional neighbours. But is that what is expected from organic farming in the eyes of the farmers and the surrounding society? The project “Nature Quality in Organic Farming” has analysed nature from different perspectives. There is not a single or a simple answer to the posed question; it all depends... Read more about the different perceptions of nature and future perspectives for organic farming in **DARCOF e-news June 2005, no. 2**.



Map of study areas



DARCOF research project III.5: Nature Quality in Organic Farming

Further literature is online at:

<http://www.darcof.dk/research/darcofii/iii5.html> under “Publications”

This site also provides project descriptions and a list of participants.

DARCOF e-news is online at:

<http://www.darcof.dk/publication/enevars.html>