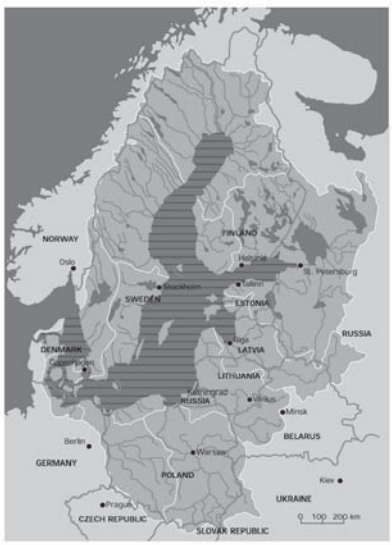
EKOLOGISKT LANTBRUK NR 40 • JULY 2004

LOCAL AND ORGANIC FOOD AND FARMING AROUND THE BALTIC SEA

Laura Seppänen (ed.)



Baltic Ecological Recycling Agriculture and Society (BERAS)

Baltic Sea Region
INTERREG III B

Centrum för uthålligt lantbruk

Ekologiskt lantbruk – 40
Local and organic food and farming around the Baltic Sea

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Local and organic food and farming around the Baltic Sea

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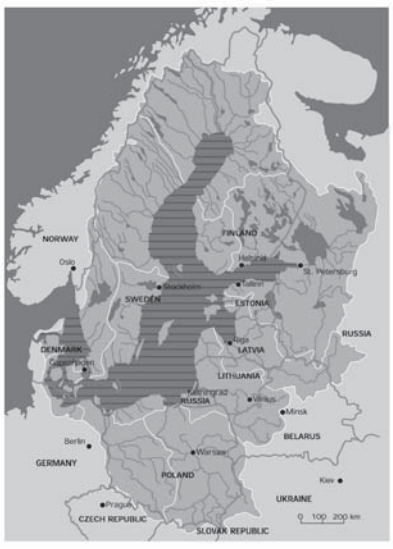

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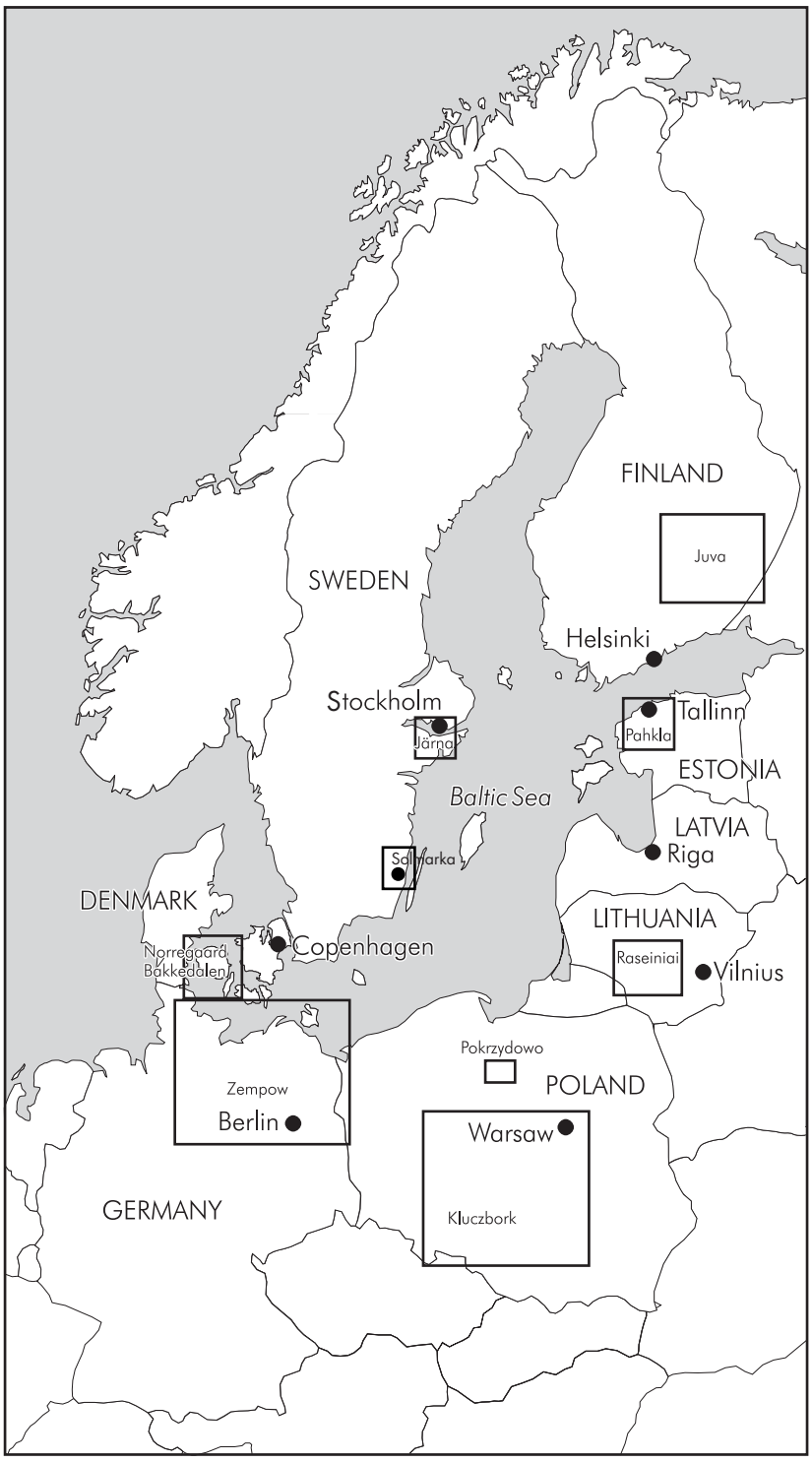
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BALTIC ECOLOGICAL RECYCLING AGRICULTURE AND SOCIETY (BERAS)

Artur Granstedt

The serious environmental situation in the Baltic Sea is a consequence of agricultural specialisation, pollution from industries, incorrect waste management and the unsustainable lifestyle prevailing in the countries around the Baltic Sea (i.e. in its drainage basin). Reduced use of non-renewable energy and other resources and the elimination of pesticides would result in less pollution of air, water and soil. Increased recycling of nutrients within the agricultural systems through integration of plants and animals in the farming system would reduce leaching from fields. These are important goals for a more sustainable lifestyle and can also contribute positively to regional development. Significant local initiatives in this direction can be found in small rural communities in the countries of the Baltic Sea region. There is a need to analyse their environmental and socio-economic consequences as well as the opportunities and obstacles facing the various actors in the food system, i.e. producers, processors, traders and consumers. It is necessary to develop knowledge and skills in this area and to better understand the potential for and consequences of a larger-scale changeover to such systems throughout the region.

A knowledge base that can be used to reduce the negative environmental impacts of production, distribution, processing and consumption of food in the Baltic Sea drainage area will be developed. This will be based on case studies, complemented with scenarios and consequence analyses, of ongoing practical, local ecological initiatives to promote local food supply cooperation between consumers and ecological producers in rural villages in the eight EU countries around the Baltic Sea. The aim is to learn about and promote more sustainable food systems. The project is a EU-funded INTERREG III B project.

Methodologically the project is based on studies of 35 selected ecological recycling farms representing different farming conditions and 10 examples of more or less local and/or regional food systems located in the eight partner countries. The first work package, (WP 1) builds on activities and cooperation with representatives from already established local ecological food initiatives and recycling farms in each country. It includes evaluation, promotion and exchange of experiences with other initiatives in and among the project countries. The second work package, WP (2), will study and quantify the environmental benefits that can be achieved through local ecological consumption, processing and ecological, integrated, recycling farming, in comparison with conventional food systems. The results will feed into the evaluation

process and be made available to the actors. The third and fourth work packages, WP (3) and WP (4), will evaluate the economic and social consequences at the societal level including rural development and job opportunities. The final work programme, (WP5), will produce an Agenda with recommendations for implementation and disseminate this to concerned actors, including policy and decision makers.

Reference

Granstedt, A. 2000. Increasing the efficiency of plant nutrient recycling within the agricultural system as a way of reducing the load to the environment - experience from Sweden and Finland. Agriculture, Ecosystems & Environment 1570 (2000) 1-17. Elsevier Science B.V. Amsterdam.

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INTRODUCTION

Laura Seppänen

The interest in local and organic food chains and systems has many reasons. One of them is environmental. The situation in the Baltic Sea with increased levels of nitrogen and phosphorus pollution has raised the need for recycling and the restructuring of agriculture.

Among researchers in organic farming and sustainable agriculture there is an increasing awareness that the restructuring of agriculture cannot be made by focusing only on farming and primary production within the limits of the farm gate. The restructuring of agriculture is necessarily linked to structural changes in the rest of the society. Creating new local food chains and systems has potential to go forward with the restructuring task. Local integration of food production and consumption requires that farming is considered in a wider system of production, processing, and demand instead of a production system only. (Lockie & Kitto 2000) And for this purpose, cooperation among farmers, processors, consumers, shopkeepers and many others is needed.

Another reason for the interest in local and organic food is rural development. Value adding and processing brings employment and economic welfare to small rural communities. Local and organic food systems and chains can potentially strengthen local identities and build creative environments for innovation and quality of life. Local recycling and close relations between producers and consumers are of importance also from the point of the organic agriculture movement.

These perspectives are considered in the project Baltic Ecological Recycling Agriculture and Society (BERAS, see page 3). It studies local and organic food chains and systems around the Baltic Sea with the aim of analyzing, on the one hand, their environmental, economic and social impact, and on the other hand, of developing knowledge of how local and organic food chains and systems can be developed further. This publication is produced by one of the five work packages of the project that aims at documenting and promoting cooperation, interaction and learning within the food systems for more sustainable rural development.

The purpose of this publication is to describe the cases around the Baltic Sea that are involved in or linked to the BERAS project. In them, active people, projects and organizations have taken initiatives towards local and organic food chains and cooperation. The cases documented are seen in the map on page 2. Part of the cases deal with food systems that are located in one municipality or village, such as Järna in Sweden, Juva in Finland, Kluczbork and Zbizno in Poland, and Raseiniai in Lithuania. Other cases, such as Nørregaard and Bakkedalen in Denmark, Zempow farm in Germany, Pahkla Camphill Village in Estonia and Solmarka in Sweden are farms which have developed local or regional food chains with their customers, or enhanced processing activities. Some of the cases follow the biodynamic and anthropo-

sophical ideas, while others emphasize organic or local nature of food and agriculture. The cases from Poland, Lithuania and Estonia are especially interesting because the new members of the European Union are actually facing rapid changes. Common to all cases is the linkage between agriculture and society that concretely takes place in cooperation between farmers, local processors, shopkeepers, municipal kitchens, administrators, consumers, project people, and researchers. Besides food, these chains or systems often have cultural, rural or environmental activities. The authors describe/present the cases in their varied geographical, historical and cultural contexts that exist around the Baltic Sea.

The authors of the case descriptions include researchers as well as consultants, and people in ecological and environmental movements (see our biographies in chapter three). The descriptions often rely on authors' own experiences with the cases and initiatives, and therefore we hope that this publication will be of interest for anyone interested in local and organic food, rural development or sustainability issues. The narrative form of expression hopefully mediates to the readers the successes, obstacles and future possibilities of the cases in a 'naturalized' (Stake, 2000; 19) and accessible way. The environmental, economic and social impacts of these types of chains and systems remains to be studied further, in the BERAS project and elsewhere.

The concept "organic" here means farming and products which are certified according to the national and international guidelines of organic agriculture. In this publication the word ecological differs from "organic" because "ecological" emphasizes especially recycling and the ecological features of production and consumption, and this does not always coincide with the certified organic. The concept 'food chain' refers to a value adding and consumption continuum from primary production through processing and distribution to consumption. A food system always includes a food chain, but it is more than that: it includes as well other actors than those dealing materially with food and its production, such as project people, social movements concerned with food, educative and administrative agencies etc. A food system also includes the natural environment which is used or affected in food chains. The concept "local" is open: what it means needs to be judged separately in each case, according to the existing and potential conditions.

What is needed for local food systems to emerge? And in what ways can the important local cooperation be developed further? Based on the cases these questions will be discussed at the end of the publication (chapter 12). With these case descriptions the readers are invited to make their own judgments and initiatives concerning local and ecological food.

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Acknowledgements

We warmly thank all the people around the Baltic Sea who in different ways have contributed to this publication, Daphne Thuvesson and Karin Ullvén in Sweden for their editing and layout work and Magdalena Lindberg in Finland for her work with the maps.

Authors

BIOGRAPHIES

Åse Ditlefsen has worked both at Økologisk Landsforening and as a Demeter inspector for many years and through this work she came into contact with these farms. She also worked with Nørregaard in the process to make a Farm Development Plan. This is a tool to move the focus from inspection (made by Danish state inspectors) to the farmer's own interest in improving the farm and its methods. By going beyond the legislation it gives the initiative back to the farmers to improve organic farming.

Anna Ellström works at the Kalmar County Administrative Board as advisor in ecological agriculture.

Ann-Christine Eriksson works at the Kalmar County Administrative Board as advisor in ecological agriculture. Since 1985 she has managed her own ecological farm.

Holger Fischer started organic vegetable farming in 1999 after finishing his Diploma in Landscape Development and Landscape Planning at Kiel University. Since then he havehad many opportunities to make contacts in and collect knowledge about local organic food chains in his daily organic producer life. At the end of 2002 he started work at the Centre for Agricultural Landscape and Landuse Research (www.zalf.de). His main research subjects are organic crop production and sustainability aspects of organic farming.

Artur Granstedt, Department of Ecology and Crop Production Sciences, Swedish University of Agricultural Sciences. Associate professor in crop science at the Swedish University of Agricultural Sciences and at Helsinki University in Ecological Agriculture, Head of the Biodynamic Research Institute in Järna. Agronomist and doctor in Plant Nutrient Sciences.

Andrew Haden M.Sc. is a doctoral candidate at the Department of Rural Development and Agroecology at the Swedish University of Agricultural Sciences in Uppsala-Ultuna and is a research assistant at the Biodynamic Research Institute (SBFI) in Järna. His work is financed by the BERAS project. Andrew comes from the USA where he studied ecological agriculture at the Evergreen State College, and worked with innovation in local food networks as a form of sustainable rural development, before he came to Sweden.

Ewa Hajduk has since 1998 been engaged in the Polish Ecological Club, City of Gliwice Chapter initially as a volunteer and since 2000 as an employee. She works mainly on projects that promote organic agri-

culture products as well as sustainable consumption patterns.

Hillevi Helmfrid has a background as a free-lance consultant in change processes linked to sustainability. She has for many years reflected upon, and experimented with, how change is brought about in social settings, and how it is not. Before becoming a consultant she worked with the design of an interdisciplinary and action oriented research project on local sustainable development at the Swedish University of Agriculture. She has a MSc in Agriculture.

Salla Kakriainen, M.Sc. is a human geographer with an interest in rural questions and is, at the moment, involved in research of local and organic agro-food networks. She is currently working as a researcher at the Helsinki University, Institute for Rural Research and Training.

Anzelika Raskauskiene is lector at the Department of Ecology, Environmental Institute at the Lithuanian University of Agriculture and editor of the newsletter "Organic farm: science, production, market".

Vida-Marija Rutkoviene is director of the Environmental Institute at the Lithuanian University of Agriculture and is one of the pioneers of organic agriculture in Lithuania.

Laura Seppänen has worked with extension and research in organic farming since 1989. Through researchers and farmers she has had contact with the Juva case (chapter 4 of the book) for many years. She has currently finished her activity-theoretical doctoral thesis about learning challenges in organic vegetable farming. Employed at the Institute for Rural Research and Training of the University of Helsinki she is involved in research of local and organic agro-food networks.

Maria Staniszewska has a MSc in chemical engineering from the Technical University Gliwice, Department of Chemical Engineering (1978) where she has also done her post graduate studies (1986).

Since 1993 she has been the President of the Polish Ecological Club, City of Gliwice Chapter. In 1998 she was one of the founders of the Polish Coalition to Support Organic Agriculture and has been its President since 1999. Since 1997 she has coordinated the program "Polish model of sustainable agriculture". In 2003 –2004 she has been the main coordinator in Poland of the BERAS project.

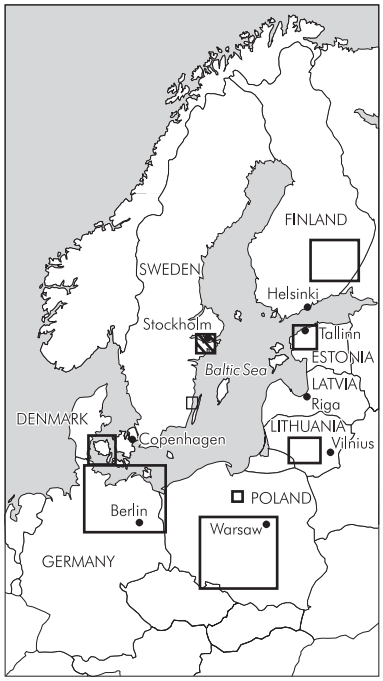
JÄRNA, SWEDEN – Community consciousness as the base for a learning local ecological food system

Andrew Haden & Hillevi Helmfrid

Introduction

The objective of this paper is to give an overview of the local organic/ecological food system (LO/EFS) in the town of Järna, in Stockholm County, Sweden. This local system has been developing over the past 40 years and today presents a positive example of what residents within a small semi-rural area can achieve regarding local organic food production, processing and marketing. Through hard work and collective action, positive change has been possible.

This paper paints a background picture of the history of the biodynamic farming community and food system in Järna, describes what is happening in the community today, as well as how key groups within the community view the future direction of the community and its food system.

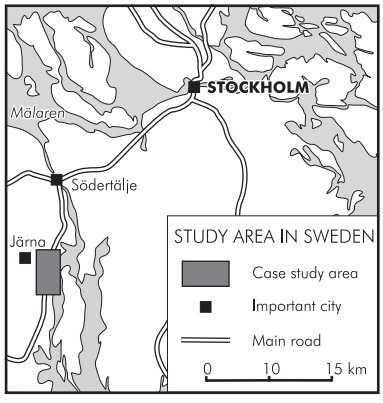


Method of inquiry

This case description of Järna was developed through interaction with members of the Järna community over the course of 6 months: from June 2003 to January 2004. In addition to semi-structured interviews, information was gathered through meetings with residents involved in food production, processing and marketing and other key informants. Two different meeting forms were employed: The Open Space Technology (Owen, 1997) and a variation of Appreciative Inquiry (Cooperrider and Whitney, 1999). The Appreciative Inquiry meeting yielded much information about the historical events that have contributed to the Järna of today, while the Open Space Meeting was decidedly oriented towards the future. In addition to primary data derived from interaction with the community, statistical data (SCB, 2004) and previous documentation of the food system activities in Järna, were used to complement this description. (Adler et al., 2003; Björk, 2003; Solér, 2000)

Södertälje municipality and the town of Järna

This section presents some basic geographic, demographic and economic information related to the town of Järna and the municipality in which it resides in order to give some contextual information regarding the relationship of Järna to the surrounding society.



Geography

The town of Järna sits within a larger municipality called Södertälje, which itself lies within Stockholm County (see map). The Södertälje

municipality has primary jurisdiction over the town of Järna, although Järna has local control over schools and some health provisioning. Being close to Stockholm (60 km) residents of Järna and Södertälje easily access the Stockholm area, which is the largest economy in Sweden. This closeness to a major urban center also facilitates tourism to Järna. In fact, the town of Järna attracts many tourists and visitors both to take part in the cultural and educational activities that occur there as well as due to the strong ecological profile that the Järna area has built up over the years.

The climate in Södertälje is mild during spring and fall, with cold dark winters, and warm summers with long hours of daylight. Figure 1 shows the average precipitation and temperatures by month over the years 1961–1999.

The soil in the Järna region is composed primarily of clay loam, with a humus content between 2 % and 3 %. A large proportion of silt predisposes the soil to crust formation. The soil under the topsoil depth is stratified, with glacial varved clay at the bottom. The glacial clay is nearer to the topsoil in elevated areas, whereas in the more low-lying areas the clay content is lower and the soils dry out more quickly during the spring (Granstedt, 1992). The soil and climate conditions have a strong influence on the type of agriculture that can be profitably pursued in the area and this, in turn, affects how self-sufficient the community can be with regard to various products.

The farms in the Stockholm area are considerably larger than the Swedish national average. Table 1 shows total farmed area in Stockholm county and Sweden with farm area categorized by farm size. In Järna the average size of the four primary farms supporting full time farmers of grain, milk and meat is 110 ha, indicating that the farms are large by Swedish standards, but close to the regional average.

The land use in Stockholm county, as can be seen in Table 2, is much more strongly agricultural (17 %) and urban (14 %) than the Swedish average. This reflects the situation in the Järna area as well. This is only natural given that more intensive land uses like agriculture dis-

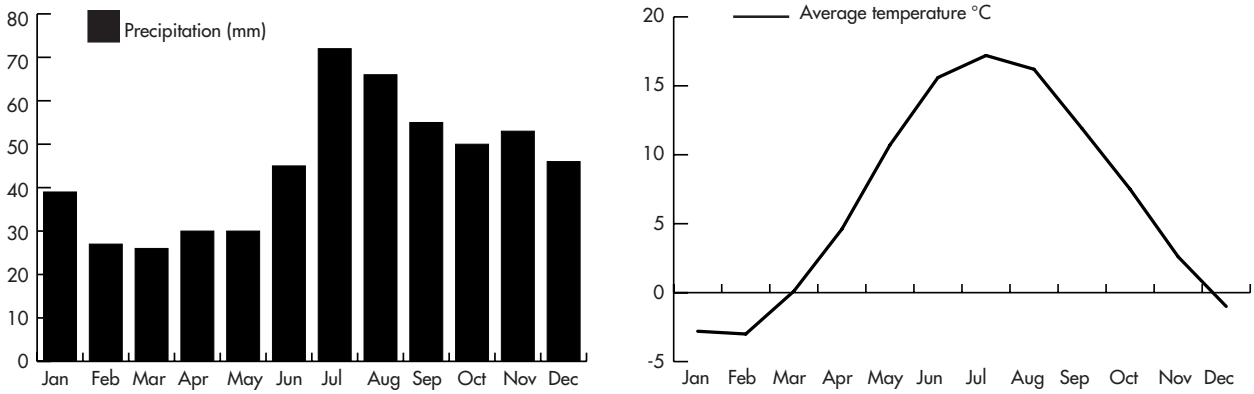


Figure 1. The average precipitation and temperature by month 1961–1999.

place less intensive uses like forestry near urban areas.

When comparing the percentage of farmed area under certified organic production, the distinction between Järna and the rest of Sweden is quite strong. In Table 3 we see that Järna has 43 % of its total farm production area under certified organic management, compared with 21 % for Södertälje, 6 % for Stockholm County and 5 % for Sweden as a whole. These statistics support the premise that Järna has a strong ecological profile, both nationally and regionally.

Demography

Södertälje municipality's population is currently 79 600 inhabitants. Of these 43 % have a foreign background with people of Finnish, Turkish, Syrian, Iraqi, Lebanese, German, Norwegian and Chilean backgrounds being the largest groups. The town of Järna has around 7 500 inhabitants of which 28 % have a foreign background (SCB, 2004), compared to the Swedish average of 17 %. Compared to the rest of Sweden, Södertälje municipality and the town of Järna are quite international. With regard

	2,1–5,0 ha	5,1–10,0 ha	10,1–20,0 ha	20,1–30,0 ha	30,1–50,0 ha	50,1–100,0 ha	100,1– ha	Total area of arable land
Stockholm	713 0,8 %	1 745 2,0 %	5 557 6,5 %	5 291 6,2 %	8 830 10,3 %	19 061 22,2 %	44 564 52,0 %	85 761
Sweden 2002	41 110 1.5 %	91 570 3.4 %	200 735 7.5 %	193 279 7.2 %	376 113 14.0 %	717 112 26.8 %	1 060 022 39.6 %	2 679 941

Table 1. Total farmed area in Stockholm County (including Södertälje and Järna) and Sweden by farm size with percentage of farms in that size category.

	Agricultural land	Land under forest	Built-up areas and associated land	Quarries, pits	Mires	Bare rock, high mountains and other land	Water	Total land and water area
Stockholm	116 070 17 %	321 500 47 %	93 500 14 %	1 100 0,2 %	11 000 2 %	108 750 16 %	26 990 4 %	678 910
Sweden	3 563 330 8 %	23 423 500 52 %	1 121 900 2 %	35 000 0,1 %	4 945 000 11 %	7 944 760 18 %	3 995 990 9 %	45 029 480

Table 2. Land use in Stockholm County (including Södertälje and Järna).

	Järna	Södertälje	Stockholm County	Sweden
Area under organic production (ha)	483	1 800	5 656	136 940
Total farmed area (ha)	1 135	8 761	87 370	2 705 984
% of farmed area that is organically certified	43 %	21 %	6 %	5 %

Table 3. A comparison of the percentage of total farm area under organic production in Järna, Södertälje, Stockholm and Sweden. (SCB, 2001; Bingham, J. pers. Comm.)

to employment , 25 % of the workforce of Södertälje works within the manufacturing industries. Södertälje has two large international companies, the car and truck maker SAAB-Scania AB, and the pharmaceutical company AstraZeneca AB. Together they employee approximately 12 650 people. After these, the municipality and the county council employ the next largest group with around 6 680 employees. The primary industries (fisheries, agriculture and forestry) employ approximately 350–400 adult men and women, which is approximately 1 % of the total employed (SCB, 2004). The total area of Södertälje municipality is 523 km^2, and the population density 151 per km^2 (SCB, 2004). The age profile of Södertälje municipality is very much in line with the Swedish national average (see Figure 2).

History of the municipality

Since the end of World War II, Södertälje has grown as a municipality as it incorporated Järna, Östertälje and other small nearby towns. The period of 1960–1980 saw rapid growth in the society as a whole with development of all types of infrastructure, especially new housing, waterworks and roads. It was during these years that many immigrants moved to Södertälje. Currently Södertälje is expanding once again, primarily due to the employment available in one the major corporations mentioned above. (www.sodertalje.se.)

In order to paint an accurate picture of this case for the reader, it is important to make note of some distinctions between the town of Järna, and the activities of the community that is at the heart of this case. Lying on the outskirts of the town of Järna is a constellation of businesses and social activities that are all in some way connected to anthroposophy.

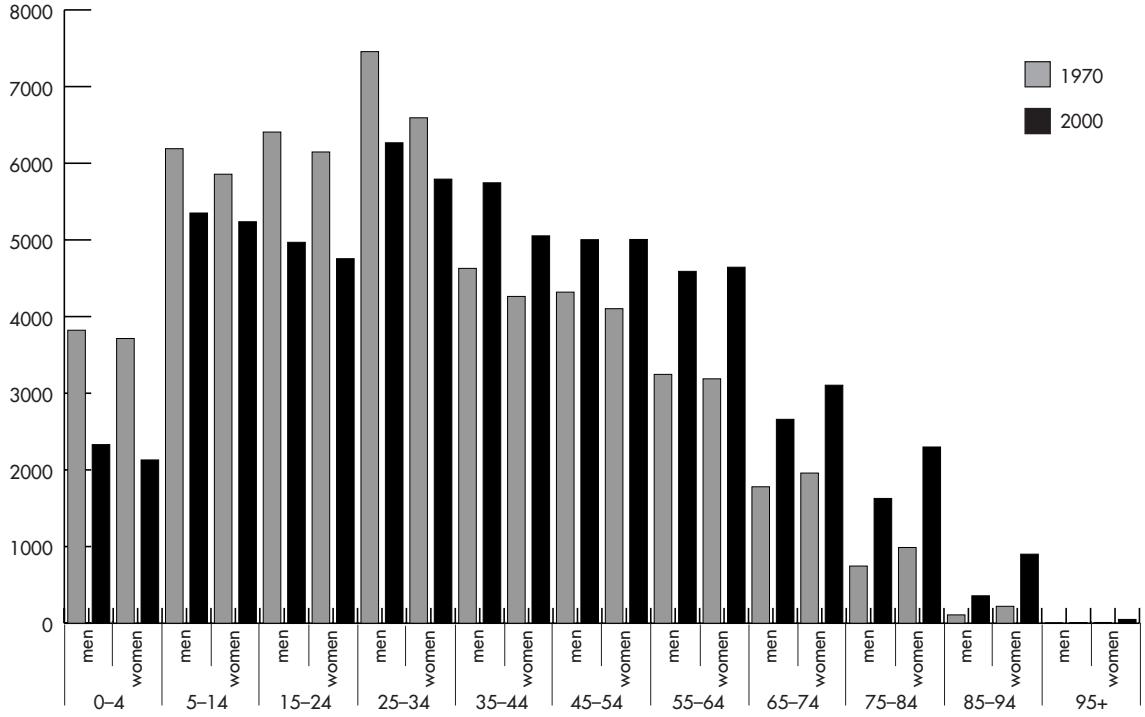


Figure 2. Population by age in Södertälje municipality in 1970 and 2000.

Anthroposophy is a humanistic spiritual science, based on the life work of Rudolph Steiner (1861–1925). Anthroposophy seeks to integrate many aspects of human life, and humanity's relationship to the larger cosmos and includes specific prescriptions for education, agriculture, medicine, art, music and spiritual practice. In Järna, over 30 companies, not-for-profit foundations, primary and secondary schools and alternative health care institutions currently operate, all based in some way on anthroposophic principles. It is estimated that there are approximately 2 000 people employed in these.

Biodynamic agriculture is the form of agriculture associated with anthroposophy and the teachings of Rudolf Steiner (1924). It is largely founded on the concept of viewing each individual farm as a living organism. This philosophy translates into a number of specific practices including: the integration of animals and crop production on mixed farms, the use of special preparations to maintain and enhance the flow of cosmic and life energies within the farm organism, the timing of planting, harvesting and cultivation activities in accordance with the phases of the celestial bodies (including the sun, moon and outer planets), and by the complete avoidance of all chemical fertilizers and synthetic biocides in the farm system. Demeter is the name of the organization responsible for the international certification of biodynamic products, and the Swedish branch of the Demeter organization is located in Järna.

Most of the farms that comprise the production base of the LO/EFS in Järna practice biodynamic agriculture. Although the food system in Järna as a whole is based to a high degree on local production, it does import considerable quantities of food from both Europe and the rest of the world. What is unique to Järna is the concentration of biodynamic farms in one place, and the well-developed consumer network that buys the produce of these farms.

With regard to the local purchasing and processing of food, the anthroposophical movement in Järna creates synergy within itself and is in many ways self-reinforcing. Because many of the businesses surrounding the farms are anthroposophical in orientation and prefer to buy biodynamic food, there is a ready market for the local production. This is important to take note of in that the food system has evolved within an environment where some important (and possibly unique) preconditions exist.

Regional/local agriculture and society

History

A meeting was held on June 16th, 2003 with a group identified by Artur Granstedt, the director of the Biodynamic Research Institute in Järna, as being key actors in the Järna area with regard to the LO/EFS. The meeting participants engaged in an open process of collective inquiry, offering their ideas as to what has led to a positive development of the local food system in Järna through its history. Participants were asked to focus on the "positive core" – that which they felt makes Järna a

positive example in terms of ecologically-produced/locally-distributed food. A large timeline including past, present and future was placed on the wall. On this timeline participants were invited to put activities, initiatives, names of people, happenings, events, incidents, organizations, etc that made Järna a positive example. This mapping was done together by the participants and meeting facilitators/authors of this paper, and focused solely on that which was considered by the group to be positive. After the participants had written down their contributions, they were asked to tell the group about what they had written and why. When this was finished, a group reflection ensued during which time any thoughts and ideas the participants had about the timeline were voiced.

This approach was inspired by the attitude underlying the methodology known as Appreciative Inquiry. Instead of focusing on problems, we (the authors) chose to start by focusing on the moments of innovation and breakthrough in the development of the local food system in Järna. This helped give us (the authors) an understanding of the creative forces in Järna that contributed to making it a positive example of a sustainable local food system. The idea was to let the residents themselves describe their history, because their understanding is based on experience, and a collective recollection of history recounted by those who have experienced it is likely to be more accurate than the accounts of single individuals. The primary purpose of this meeting was to initiate contact with those members of the community that played a role in the LO/EFS, and to lay the ground for future collaborative work that was respectful of the path the community had traveled thus far.

The anthroposophic community in Järna has a long and unique history that encompasses the better part of 80 years. In the late 1920's and continuing until the post-WWII years, a number of key cultural personalities initiated anthroposophy-inspired educational activities beginning with the "Vibyholmsskolan", and "Mikaelgården". Particularly important was Mikaelgården, founded in 1940 as a school where the mentally challenged could receive a holistic education based on the pedagogical principles of Rudolf Steiner. This was also a period in which some key individuals moved to the area from Central Europe and brought with them anthroposophical ideas and practices, planting the seeds of what was to become this unique part of Järna today.

In 1949, the Nordic research circle on biodynamic agriculture was founded by Bo Pettersson, Bo Storén, Gösta Widegård, Hans Glaser, Jerker Engborg, and Kjell Arman. This important collaboration began a period of development of a number of initiatives related to biodynamic agriculture and anthroposophy, and laid the foundation of the agricultural activities in Järna. Later, in the 1960's, more developments transpired regarding the evolution of food and agriculture related activities in Järna, building on the work of these pioneers. For instance, in 1964, the Saltå Kvarn flourmill and bakery began to operate. This brought a new level of organization to the food system in Järna by adding proces-

sing capacity and economic development that was consonant with anthroposphic values. Solbergahemmet, a school of curative education, was also founded in the 1960's. Järna area farms were purchased – Skilleby Gård (1964), Ytter Eneby Gård (1964), and Skillebyholm (1972) by a local real estate developer Åke Kumlander; Nibble Gård (1966) by Frans Carlgren and Skäve Gård (1970) by Lars Evers. These initiatives were backed by a group of investors and helped establish a permanent presence for biodynamic agriculture in Järna. Through these actions the production base of the LO/EFS was secured. Vitahuset/Rudolf Steiner Seminariet, a college focusing on anthroposophic education and the training of Waldorf schoolteachers, was founded in 1964. Also in the 60's the food distribution company, Biodynamiska Produkter (BP), was founded by Artur Granstedt and began operations. This expanded the web of economic activities related to local organic food production. These initiatives and acquisitions gave the anthroposophic movement in Järna a polycentric distribution in the landscape, and nurtured the roots of an anthroposophically-oriented economy.

In the 1970's Ekobanken (the Ecobank) was founded and began operating. This made it possible to borrow money for anthroposophical initiatives. In addition, Skilleyholm's fall farmer's market began to operate, which was a way for the community to celebrate local agriculture, and to find a way to increase the number of people visiting Järna, where the emphasis was on local food. This has continued until today and is now very popular, with long lines of cars forming each year as many people from the surrounding towns and cities come to visit Järna at this time.

Another development in the 1980's contributing to the establishment of today's local ecological food system, was the weekly Biodynamic Production seminar meetings in Järna (1978–84), where researchers and agricultural practitioners met to discuss biodynamic agriculture. Also in the 1980's, the first academic Doctor finished his Doctoral thesis on the Quality of Biodynamic food in 1981 (Dlouhy, 1981). With regard to the links between Järna and the surrounding community, Anders Engström, a strong supporter of biodynamic agriculture and local food initiatives, began to work in the local KONSUM shop in Järna. This helped establish a crucial link in the local ecological food system by providing an outlet for locally grown food to the entire community.

The 1990's saw some additional significant developments that have contributed to the current positive situation in Järna, with regard to local ecological food. In 1992, the Culture House (Kulturhuset) was built. This building has a very distinct design that is visible from a distance and gives the anthroposophic initiatives in Järna a public face, a *public persona*. The chef in the kitchen at the Culture House, Robert Westerdahl, serves high quality and locally grown biodynamic food as much as possible, giving visitors a positive introduction to the delights of organic local food. In the early 1990's the Biodynamic Research Institute Foundation (SBFI) was begun under the leadership of Dr. Artur

Granstedt. This research institute has primarily focused on the implications of mixed farming systems for the recycling of nutrients within farms, and the reduction of nitrogen leaching to local water bodies. The Swedish portion of the BERAS project is largely undertaken at SBFI. In 1998, the local consumer initiative "Initiative Locally Grown" (Initiativ Närodlat) was begun, partly inspired by Artur Granstedt of SBFI. This aims to create a more deeply networked local ecological food system in Järna. This initiative is a collaborative effort between consumers, farmers, food processors and shopkeepers interested in increasing the availability of locally grown organic produce. They are the most active community group organizing the local ecological food system in Järna. Also during the 1990's, a large local farm, Säbygård, converted from conventional production to certified organic production (KRAV-certified). This was seen by many to be an important symbol of the lessening tension between the biodynamic farming community and the surrounding community.

Looking at the situation during the past few years up until today, there is a growing demand for locally grown organic food. Some people believe that the worsening food quality in the industrial food sector has stimulated the demand for biodynamic products. Their experience indicates that customers search for taste, healthfulness and quality first, then they choose products that are good for the environment. There is some research that supports this. (Bjork, 2003, Solér, 2000) Many customers in Järna are of the opinion that biodynamic production unites all of these aspects and this perception helps support the local farm shops in Järna. Another recent initiative considered to have a positive influence on the growing demand for locally grown ecological food - though not directly associated with Järna - is Bondens egen Marknad (Farmer's Own Market) in Stockholm. This initiative has been igniting the demand for locally grown, high quality food and has, to some degree, influenced the Järna community, though they have been working on these issues for decades. Another important development is that Saltå Kvarn, the local flourmill and bakery, started a campaign in 2003 to increase the production of biodynamically grown grain. They pay producers approximately 25 % more for this compared to organically grown (KRAV) grain. (1.95 - 2.45 SEK / kg BD versus 1.55 - 1.95 SEK / kg KRAV). This has begun to inspire a significant changeover to biodynamic production methods, with many organic growers converting to biodynamic.

At the present time, new alliances are being formed between some members of the biodynamic farm community and various Swedish organizations such as the Ecological Farmers Union (Ekologiska Lantbrukarna), the Small Farmers Union (Sveriges Småbrukare), etc. These, combined with popular education courses and marketing campaigns, are furthering the communication of the values of the Järna community to a larger audience. Some feel that this is part of a larger positive trend in the Swedish population towards understanding and discussing the need for quality food products, and local production.

Present situation

This section describes the different individuals and institutions in the Järna area that are currently involved in the production and consumption of ecologically/locally grown food, either within the business sphere, or as private groups. This information is based on interviews with various members of the community who are in some way involved with the local food production system in Järna. (See list of interviewees at the end of the paper.)

There are nine biodynamic farms and market gardens that operate directly in the Järna area that serve local customers with their produce. These farms and their main produce are listed in the table below. The Järna farms are all certified by the Biodynamic Agriculture Association of Sweden and receive the right to use the DEMETER trademark in their marketing activities.

One farmer cooperative operates in Järna: Järna Odlaring. They represent the local biodynamic farmers and gardeners and own two brands: Järna Grönt (vegetables) and Järna Kött (meat). This is run as an economic association – a producer's cooperative.

Looking Forward: The Open Space Meeting

The first large group meeting focused on that which was considered positive, the second meeting looked at what needed to be changed to improve the system. The meeting form chosen for this second meeting was Open Space Technology (Owen, 1997), as it would allow participants to further understand the situation in Järna, and to create space for further development of the system. The Open Space Meeting was convened on October 1, 2003 and was attended by 36 people from the community who were interested in discussing the local ecological food system in Järna, and particularly what future developments were needed to improve the system in general. The meeting was titled "Can we eat our way to a better environment?". Participants included representatives from all groups involved in different aspects of the local organic food system in Järna. They included farmers, processors, restaurant owners, shopkeepers and consumers.

During the meeting, participants were encouraged to suggest to the group the topics that most interested them and invite others to discuss that topic. These topics are indicative of the kind of issues that are important to the different individuals/groups playing important roles in the local ecological food system, and for this reason they are listed below. This list of topics was generated by the participants in the morning and discussed for 4 hours in the late morning and afternoon:

- How is the changeover to ecological agriculture going in Sweden?
- How can consumers create economic security for local producers and processors?
- The menu has meaning.
- Ideology/intention vs. Economy/practice.
- Stronger local food in schools/care for the local economy through

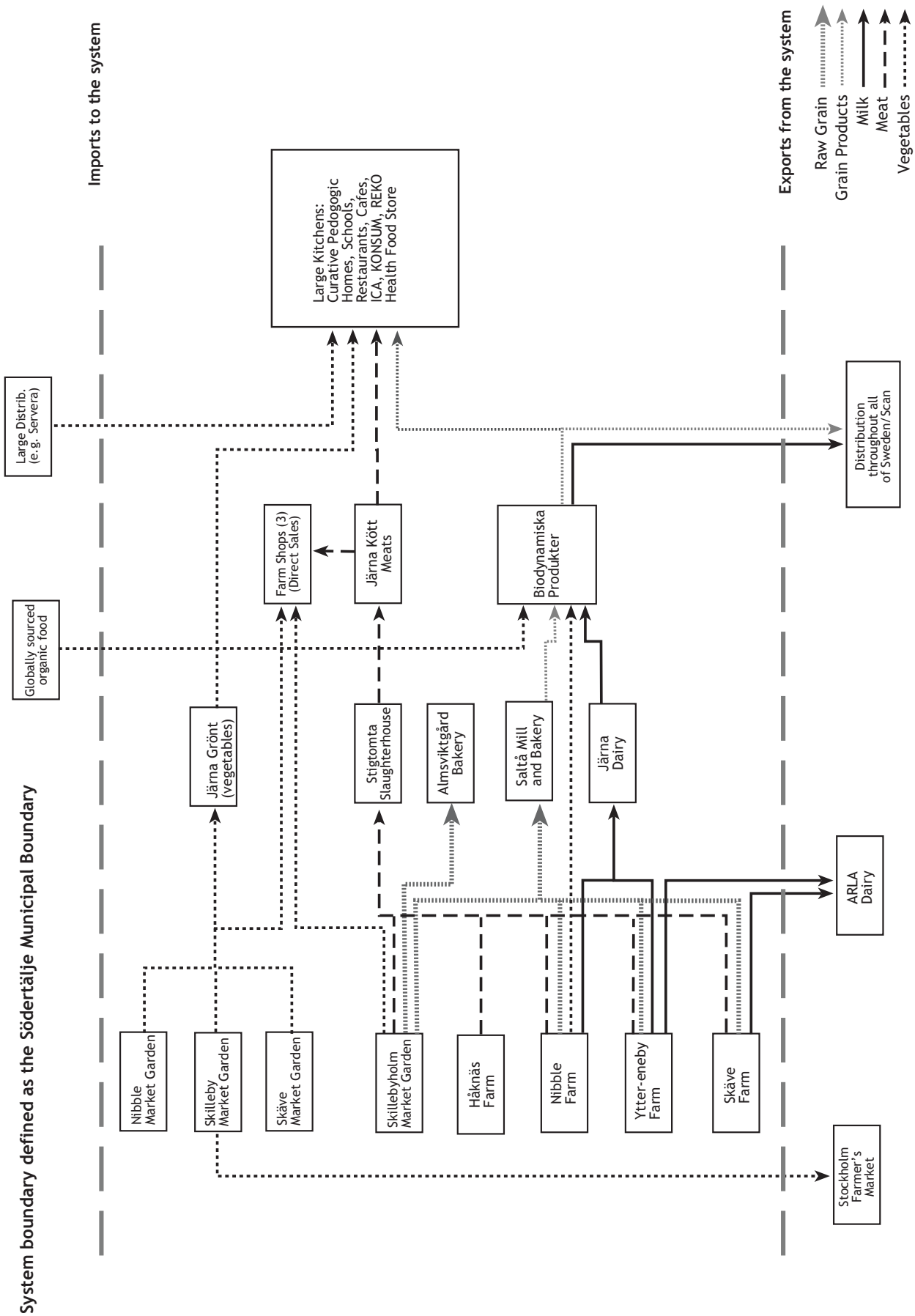


Figure 3. Diagram of the Local Ecological Food System in Järna.

Producers

Farm	Ownership & Management	Production	Customers
Nibble Gård (farm)	The Nibble Foundation is both owner and manager. Artur Borg and Christoffel van der Helder are the farmers.	Milk: 38 dairy cows (258,000 kg milk). Meat: 10 lambs, 36 calves, 6 cows Crops: 90 ha fodder, 25 ha grain, 10 ha for bread grain, 15 ha for animals, 2 ha potatoes, 0.3 ha beets.	All milk is delivered to Järna Dairy. Meat is sold through Järna Kött, the farmers co-operative. All bread grain is sold to Saltå Kvarn, the local flourmill and bakery.
Skilleby Trädgård (market garden)	Agape Foundation is the owner; Martin Fellqvist is the gardener.	Crops: 2.5 ha vegetables, 0.05 ha greenhouses with vegetables. Open land growing is primarily fresh veggies, not storage crops. Greenhouse crops are spring starts and 10 varieties of tomatoes in the summer and fall.	Vegetables sold through either Järna Grönt, Biodynamiska Produkter, or at the Stockholm Farmer's Market.
Ytter Eneby Gård (farm)	The Agape Foundation is the owner of the farm. Dagfinn Reeder leases the farm from Agape, and he and his wife farm it together. They have one employee.	50 dairy cows (348 000 kg milk), 10–20 ha pasture, 30–40 hectares of bread grain (oats, winter wheat).	Most of the milk is sold through Järna dairy; any surplus is sold to Arla. Grain is sold to Saltå Kvarn.
Nibble Handelsträdgård (market garden)	Nibble is owned as a corporation (AB). Dag Salomonssen is the lead gardener.	3 ha mixed vegetables, berries, herbs, greenhouses (0.10 ha).	Their produce is sold through their own shop
Skillebyholm (farm and garden)	The farm and garden are operated as part of an education in biodynamic agriculture. The foundation "Skillebyholms Odlingar" runs the farm and garden and the Skillebyholm Foundation runs the school as a non-profit endeavour.	4 calves, 3 sheep w/lambs, 3-4 horses, 40 chickens. 10.4 ha grain, 8 ha pasture, 0.5 ha mixed vegetables, herbs, flowers, 0.75 ha fruit, berries. 4 heated greenhouses (0.06 ha).	Their produce is sold to the restaurant and farm shop at Skillebyholm, their bread grain to Almviksgård and Saltå Kvarn bakery. Eggs and meat are sold in the farm shop.
Skäve Gård (farm)	The farm has an "economic association" for practical management (Skäve ekonomisk förening) that is run by Holger van Woude. The Skäve Foundation owns the farm, is responsible for the debt and charges rent to the association. The association does the work and day-to-day management.	Milk: 50cows (294,000 kg milk) Meat: 26 calves, 20 cows, 4 heifers, Crops: 80 ha grain (oats, winter wheat), 60 ha pasture.	All milk is sold to Arla. Meat is sold through Järna Kött, and grain to Saltå Kvarn bakery.
Skäve Trädgård (market garden)	Privately owned through an economic association. Skäve Foundation sees to it that there is someone to run the garden.	2 ha mixed vegetables, herbs.	Vegetables are sold at the Skäve farm shop and through Järna Grönt.
Glashuset at Skäve	The Skäve Foundation must see to it that there is someone to run the greenhouse. Berit Holte runs the garden/greenhouse.	Greenhouses (0.10 ha) producing basil and tomatoes (for pesto).	
Håknäs Gård (farm)	Private farm, owned by Åke Jonsson.	100 ha pasture and fodder for 80 steers, approximately 40 slaughtered per year.	Meat is sold through Järna Kött.

Processors and distributors

Organization	Ownership & Management	Description
Saltå Kvarn mill and bakery	Saltå Kvarn is a corporation (AB), thus ownership is by stock. Previously it was owned by Agape Stiftelsen but was sold to investors. The VD is Johan Ununger.	This is the major bakery and flourmill in Järna, buys from all over Sweden and occasionally abroad, and sells all over Sweden. It buys biodynamic (BD) grain above organic, in order to keep the brand image and DEMETER certification. It is changing towards more local (Swedish) purchasing with an offer of 25 % price increase for BD grain. They bake for both their own label, as well as Organic (KRAV) certified bread for KONSUM shops.
Järna Mejeri (dairy)	Thomas Stenius is the manager of the dairy.	This dairy buys all milk from Nibble and some from Ytter Eneby. They have many special fresh products (milk, yoghurt, soft cheese, sour milk, etc.) that are sold only in Järna, but hard cheese is shipped all over Sweden through the Biodynamiska Produkter network.
Järna Syrat	Achim Bäppler is owner and manager of this small company. He took over from Thomas Stenius.	He processes vegetables for Sour Kraut etc. He makes some local purchases of vegetables and harvests honey. His products are sold through local shops, etc.
Stigtomta Slakteri (slaughterhouse)	This is a small private company, possibly a corporation.	It is used by Järna farmers, but is located 50 km away and serves both conventional and organic producers.

Retailers and restaurants

Organization	Ownership & Management	Products
Biodynamiska Produkter	This is owned by a Foundation. John Gerard is chairman of the board and Tobias Zeiher is manager.	This is the only wholesaler in Järna, and the biggest DEMETER wholesaler in Sweden. They distribute hundreds of KRAV and BD certified food products from all over Europe and the world for sale to retailers wherever they are. They purchase some fresh vegetables, but have no explicit local distribution.
Nibble Handelsträdgård	Dag Salomonsson and Petter Fillipsson are the managers. Ownership is through shareholders (AB).	This is a local retail shop where KRAV and DEMETER products are sold. They have a similar selection to the wholesaler BD Produkter. People from both Järna and the surrounding area come in to shop there. They sell from their own market garden, as well as KRAV and BD vegetables and fruits from the world market, according to seasonal availability. Generally, they sell their own produce first, then locally grown, then buy from BD Produkter (which buys from the world market).
Skillebyholms Gårdsbutik farm shop	This is owned by the Foundation "Skillebyholms Odlingar" and managed by Elisabeth Lüthe.	This farm shop sells locally-produced BD meat, vegetables, some grain products, and handicrafts mostly to tourists.
Saltå Kvarn bakery and Café	This is managed and owned by Saltåkvarn AB.	They sell Saltå bread, as well as coffee and cakes, baked at the bakery. They also sell some fresh local products, when available.
Café Linné	This is owned by Kulturforum AB, and managed by Robert Westerdahl.	They cook and serve gourmet BD and organic food at a small restaurant attached to the Kulturhuset. The chef buys as much local BD produce as possible.

Vidarklinikens Café	This is owned by The Vidarkliniken Foundation.	This café serves patients of the clinic, mostly coffee, tea and bread, etc.
Skäve Gårdsbutik farm shop	This is owned by the Skäve Foundation and managed by the garden manager.	It is similar to Skillebyholm.
Rudolf Steiner Seminariet cafeteria	This is owned by the Rudolf Steiner Seminariat Foundation.	It serves meals to Seminariet students and staff etc. and is similar to Café Linné in menu and purchasing.
KONSUM shop	This is a national food chain which is a weak member-owned cooperative.	They buy local produce from Järna Grönt and Järna Odlaring as available, and from BD Pro dukter.
ICA shop	This is a national food chain of privately owned shops. Thomas and Ann Lindberg are the owners.	They buy local produce from Järna Grönt and Järna Odlaring as available, and from BD Produkter.
Häslokost - REKO	They buy local produce and produce from BD Produkter.	

Large and private kitchens

Organizations	Purchasing
3 Waldorf schools	They do some local purchasing through Järna Grönt and Kött, and also buy through Biodynamiska Produkter and Servera, a large wholesaler.
Curative education homes in Järna (approx. 10)	They do some local purchasing through Järna Grönt and Kött, and also buy through Biodynamiska Produkter
Vidarkliniken	They do some local purchasing. There is considerable potential for future networking.
Private consumers	Studies by Björk (2003) and Solér (2000) show that many who shop in Järna are committed to BD products and choose them over all others, regardless of price.

local purchasing.

- To what degree do subsidy and economy steer production?
- The school's food.
- Local production vs. solidarity with the south.
- How can we do business without speculation?
- How do we go from words to practice?
- How can producers engage in the local market?
- Lengthening of the growing season.
- Which environmental questions are most important? Or, how do we know that we are doing the right thing?
- Eco-village group discussion.
- Am I responsible for where and what?
- Water quality in growing and processing food.
- To work with everyday food. The attitude of youth as evidence of success.
- What is the consumers' responsibility for the landscape?

These topics are indicative of the kinds of issues that are important to the individuals and groups who comprise the local food networks in Järna. The purpose of describing these here is to give evidence of the motivations with which many within the Järna area approach food and the environment. This is, in a sense, the background consciousness

within which the local ecological food system activities take place. This consciousness is possibly one of the most important elements influencing what can be done in a given community.

Discussion

Obstacles

Despite these successes described above, it is important to recognize the bottlenecks within the local ecological food system in Järna that need to be overcome if the system is to improve. There is currently too little processing capacity for milk. For instance, although Skävegård is a biodynamic certified farm they are currently selling all of their milk to Arla, the largest Swedish dairy, as certified ecologically grown, but not as biodymanic, for which it qualifies. Ytter Eneby Gård also does this with a portion of their milk. The problem is largely one of under-capacity at the local dairy (Järna Mejeri), and this in turn leads to a sub-optimization of the system as whole. The economy of Skävegård is especially affected. They could receive an additional 10–20% income without changing their production strategy.

Another major bottleneck is vegetable and root crop production. Generally, the demand for all the products grown in Järna is much higher than what is produced; both within the community and by Stockholmers, who live just 60 km away. Issues mentioned by the farmers that limit production are access to land, poor soils for some crops, as well as a need for risk capital to enter new areas of production. In addition, one farmer mentioned that there is a lack of good advisory capacity within Sweden for biodynamic production, compared to his home country of Holland.

Furthermore, there are issues related to the price of Biodynamic produce, which is generally the highest priced food on the market. For instance, the local public schools began a process to purchase food from local farmers, many of whom are biodynamically-certified, but they found the prices prohibitive. The premium price commanded by biodynamic produce is also putting pressure on local farmers to seek lucrative markets away from the immediate Järna area. For example some farmers are selling their produce in the Stockholm area, both at small shops and the farmers' markets.

BERAS planned action

Based on the discussions in the Open Space meeting in October 2003, a number of initiatives were begun in collaboration between actors in the local community and actors who work with BERAS Work Package 1. The first initiative is dealing with prolonging the availability of locally grown food within the Järna area. A series of follow up meetings between the local farmer cooperative manager and those at the meeting who were interested in the topic were held. The main bottleneck identified was the fact that there simply is not enough biodynamically-certified produce available in Järna to justify a winter storage system

large enough to have a significant impact on winter food consumption. In addition, the soils in the area were too poor to justify the expense for any of the local farmers to begin growing root vegetables in large quantities. As they were unable to overcome these bottlenecks at the present time, this issue remains as an area of concern for future work.
A second initiative has dealt with the issue of increasing locally grown BD food served in the schools. This project was initiated by Kerstin König who works for the local school district and who attended the Open Space meeting. She wants to get locally grown food into the local schools. The project started in October 2003 with 4 people (1 BERAS researcher, 1 person from the Agenda 21 office of Södertälje municipality and 2 employees of two local school districts, including Kerstin König). Six months and six meeting later, farm managers from two farms, as well as the teaching and kitchen staff of two schools, are involved and a way forward has been identified. In the spring of 2004 school children will start visiting the two chosen farms and the schools will purchase some vegetables produced on these farms. The project has received some financial support from the Agenda 21 office and will continue into the fall, and hopefully for years to come.

Conclusion

The local food system in Järna is a good example of what can be achieved by a large group of people with diverse roles acting towards common ideals in the same place. One of the greatest strengths of the system is that it creates an environment where economic considerations are not the only considerations that steer the activities. The authors feel that the primary reason that this occurs to such a high degree in Järna is that the community has become an oasis of sorts for alternative thought and alternative spirituality that stands juxtaposed to the somewhat conservative culture of Sweden. This "oasis" seems to be the result of a complex mix of factors that can be seen as exerting both a push and a pull on the people who choose to live and work in Järna. A push in the sense that those in Sweden who have deeply held spiritual or cultural values that run slightly at odds to the prevailing culture may seek a community where their values can be more freely expressed, and Järna is one such community. And a pull in the sense of the self-reinforcing dynamics that emerge when a critical mass of ecological and progressive business activities are centered in one geographic location. Through our interviews and interaction with the community, it became clear that both the farmers and their customers greatly value having the farms in Järna, and the customers support them by buying their produce at reasonable prices, which can be much higher than the national average. Furthermore, many people who live in Järna are very health conscious (Björk, 2003), and the strict environmental standards that steer biodynamic production give the extra reassurance that the products on offer are the healthiest and highest quality available. This helps producers command a premium price and, in turn, stay in business. In addition,

having many of the farms owned through non-profit ownership, with the land owned outright by a non-profit economic association, takes some of the pressure off the farmers as they do not need to repay large bank loans for their land, only their equipment and yearly business activities. The ownership of the farms by non-profit foundation was designed to make it possible for biodynamic production to take place in the community indefinitely.

In closing, our experiences in the community tell us that what makes Järna a good example of a sustainable local food system is, first and foremost, the consciousness of the people who live and work there, who choose to weigh their farming and food purchasing decisions against ecological and social criteria, as well as economic ones. Additionally, insights gained through our interaction and dialogue with community members indicate that the community is a place where experimentation can be undertaken that can lead to the birth of new ideas related to social and ecological sustainability, which provides more evidence of the influence of progressive consciousness. Examples of this experimentation are the new biogas installation at Ytter Eneby Farm and the new organic food home delivery system called 'Ekolådan', run by Biodynamiska Produkter. Further indication that consciousness is a primary driving force organizing the activities in Järna can be seen not only in the agricultural and food system activities upon which this documentation has focused, but in the many other socially and ecologically oriented activities that take place in the community, such as the alternative health care center Vidarkliniken, and the many homes for curative pedagogics that located in and around Järna. Although it is impossible to single one thing that is responsible for the success of the LO/EFS activities in Järna, a primary factor must certainly be the fact that the system is a creation of the work of many dedicated and caring individuals who took the initiative, and expended the time, money and energy to build up and sustain the system over time. A system that we have found to be appreciated by all who partake of it.

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Personal Communications

Those present at the meeting on June 16th, 2003 in Järna:
Catharina Hausmann, Initiativ närodlat
Robert Westerdahl, Initiativ närodlat (participation for first half)
Hans-Petter Sveen, Järna odlarring (participation for first half)
Johan Ununger, Saltå kvarn
Artur Granstedt, Biodynamiska forskningsinstitutet (SBFI)
Olof Thomsson, SBFI
Hans von Essen, SBFI
Andrew Haden, SBFI
Hillevi Helmfrid, SBFI
Tracy Birge, SBFI
James Bingham, Stockholms länsstyrelse

36 member of the local community attended the Open Space meeting on the 1st of October, 2003.

Additional Interviews

Hans von Essen, SBFI
Artur Granstedt, SBFI
Hans Petter Sveen, Järna Odlarring
Peter Muller, Farmer, Skillebyholm Gård
Holger van Woude, Farmer, Skäve Gård
Arthur Borg, Farmer, Nibble gård
Dagfin Reeder, Farmer, Ytter Eneby Gård
Dairy manager, Järna Mejeri
Sales Manager, Saltå Kvarn
Manager and co-owner, Stigtomta Slakteri
Achim Bäppler

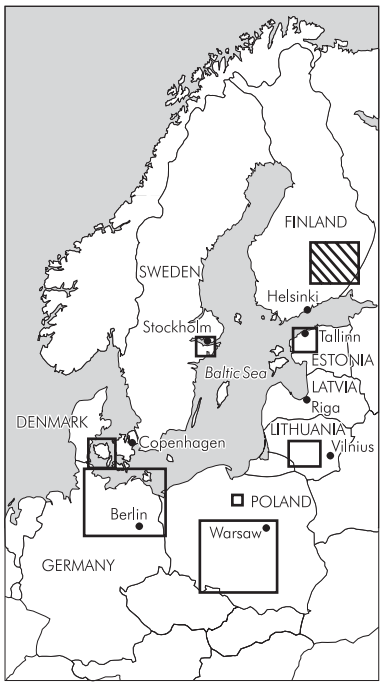
JUVA, FINLAND – Developing local food with common goals and projects

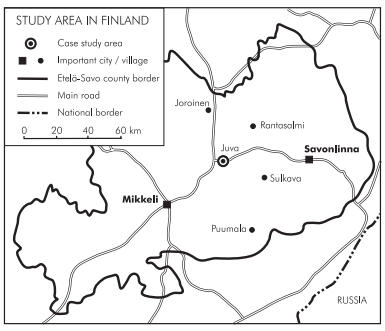
Salla Kakriainen

Introduction

The intention of this chapter is to draw a picture of the municipality of Juva as a site for the production, processing and use of local and organic food. In Juva there has been an emphasis on organic farming since the 1980s, and more recently, an emphasis on local food. Apart from this, Juva represents a rather typical Finnish rural municipality. This case study is based on information drawn mainly from interviews with local actors and from different documents. Twelve semi-structured interviews, each about a half to one and a half hours long, were made by BERAS and Lofo[1] researchers in 2003.

One goal in the BERAS project is to study the local food system from the farm level through processing all the way to the consumers. Consumers in this project are represented mostly by institutional kitchens. These were chosen because of the big volumes that they consume. According to Paananen and Forsman (2003), municipal kitchens have the greatest potential as a marketing channel for local food. Because the BERAS project in Finland mainly focuses on delivering local and organic food to municipal kitchens, this public purchasing of food will be described in some detail below. Also, because projects seem to be a common means through which the development of the food systems is accomplished in Juva these projects (as well as other initiatives) are described.





Description of the Juva case

Geography

The municipality of Juva is located about 270 km northeast of Helsinki. The nearest cities are Mikkeli (45 km, 46 000 inhabitants), Varkaus (51 km, 23 000 inhabitants) and Savonlinna (60 km 27 000 inhabitants). Juva covers an area of 1200 km^2 of which about 180 km^2 is water. (Association of Finnish Local and Regional Authorities: 2004) In contrast to its neighbouring municipalities, Juva has fewer lakes. The watersheds around Juva municipality are part of the Baltic Sea drainage area. The water flows through a system of shallow lakes that can easily become eutrophicated. At the moment the state of the lakes is for the most part good. (Ympäristön tila Mikkelin läänissä) Seventy four procent (87 000 ha) of the land in Juva municipality is covered with forests, and only about seven percent (8 100 to 9 000 ha) is arable land. (Niiranen; Juva; Association of Finnish Local and Regional Authorities 2004.)

[1]The Finnish BERAS is working in close cooperation with a national project called "Local Food Systems: Impacts and Learning Challenges", see also page 36.

Juva, like most parts of Finland, belongs to the temperate forest climate zone with cold winters. Mean temperatures are -9°C for January and +16°C for July (averages for the period 1961-1990). Annual rainfall is 640mm/year. Precipitation is highest during the late summer months and lowest in February and March. The growing season, with mean daily temperatures above +5°C, is 160 days, and the frost-free period is even shorter than that. (Häkkinen 1994; Rikkinen 1992) The grazing period is 120 days at the most. (Heinonen, 2002). The prevalent soil type in Juva region is till (moraine), which forms ridges running south-east to north-west.

Demography and history

Juva is a rural municipality with about 7 500 inhabitants. The municipality is sparsely populated with density of 6.8 inhabitants/km^2. The population has been declining for some years, as it has in many other rural areas in Finland, due to out-migration and a low birth rate. (Figure 1.)

The age structure of Juva follows the general lines of industrialised countries (Figure 2). The relative proportion of children is small and the population is growing older. Presently, for every person who has employment there are 1.6 people who are either outside of the labour

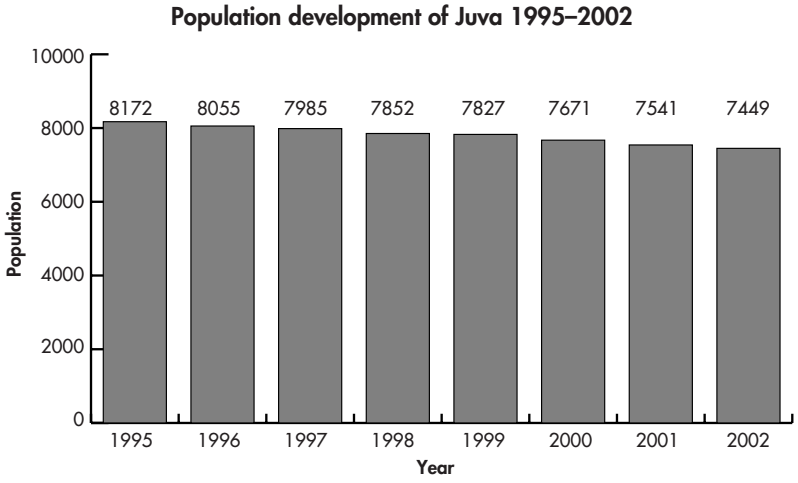


Figure 1. Population development of Juva municipality 1995-2002. (Statistics from Juva Municipality.)

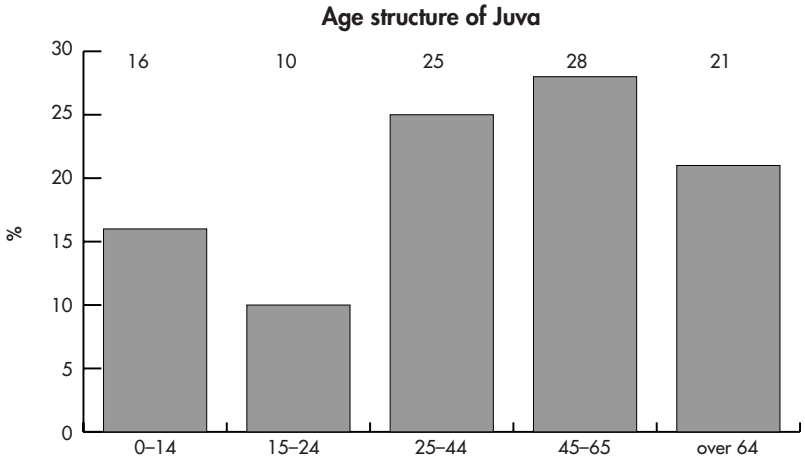


Figure 2. Age structure of Juva. (Statistics from Juva Municipality.)

force or unemployed. (Statistics from Juva Municipality.) The proportion of young people (15–24 years of age) is low also because there are very limited education possibilities in the municipality of Juva. In addition, the statistics may over-estimate the number of residents in Juva. This is possible because many students can be registered in their home municipality although they study and live in some other place.

Compared to Finnish national figures, agriculture and forestry are very important in the economic structure of Juva (Figure 3). In this sense, Juva is a typical rural municipality. Also, as in other rural municipalities, there are fewer highly educated people, the proportion of retired people is higher and the urbanisation rate is lower. In Juva 47.8 % of the population live in urban areas. The average in rural municipalities is 51.4 % and in the whole Finland 82.3 % (Association of Finnish Local and Regional Authorities).

During the last 50 years the structure of Finnish society has changed from an agricultural based economy to an industrial and service based economy. Agriculture has gone through major changes due to mechanization and its effects. When the work force was no longer needed on a family farm, the children, usually the youngest, moved to town and found work often in newly rising industries or services. The number of people employed in agriculture has been diminishing continuously during this period while the use of fertilizers and chemical pesticides has grown quickly up until the 1990s.

Agriculture in Finland is based on family farms. Recently these have become larger. Today the average farm is about 28 hectares of cultivated land. A typical farm also includes forests, on average about 46 hectares. (Heinonen 2002) In Juva, the total area under agriculture and forest production has remained at the pre-EU membership level but the number of farms has decreased by 30 %. (Laukkanen 2003.)

Regional/local agriculture and society

History of organic farming and food processing in Juva

The first influences of the organic movement in Finland can be traced back as far as to the beginning of the 20th century. The first still-existing

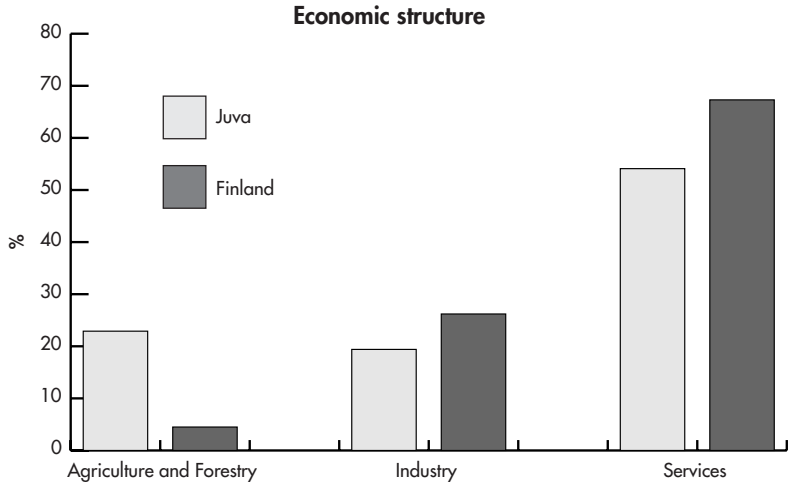


Figure 3. Economic structure of Juva compared to the whole of Finland. (Association of Finnish Local and Regional Authorities.)

organic farms converted in the 1960s, but until the 1980s there were only a couple of dozen in Finland. When specialized marketing channels started to function and even more importantly when the state conversion aid programme was established the number of organic farms grew rapidly. (See Table 1.) South Savo and Ostrobothania are regarded as the main pioneering regions for organic farming in Finland. In the 1980s South Savo declared itself to be an "eco province" and organic farming was one of the core ideas. Luomuliitto ry (The Union for Organic Farming) was founded in 1985 to act as an umbrella organisation for producer and other associations promoting organic agriculture. (Heinonen 2002.)

In Juva organic farming started at the beginning of 1980s. One of the pioneers was a well-known public person (an opera singer) whose farming was observed with interest. Jukka Rajala, the first organic advisor in the area started in 1983. Initially there were disputes between conventional and organic farmers about the appropriateness of different farming methods. Nowadays there is no bitterness between these groups of farmers. (Laukkanen 2003.)

During the past decade the food processing industry in Juva has grown significantly, giving rise to almost a hundred new employment opportunities. Small firms have received help through EU development projects. The strategy has been to diversify production and increase the level of processing. In this way more of the economic resources remain in the municipality and fuel the local economy. Three fields of specialisation have been developed. These include vegetable production both in the field and in green houses, organic production that started in the area about 20 years ago, and turkey production and processing.

Compared to neighbouring areas, Juva has a strong, although short, tradition of organic farming. Being a pioneer in Finnish organic farming research, Partala Development Centre for Rural Areas, located in Juva, began its activities in 1985 with broad development and research activities. The goal of the association is to promote organic farming and a sustainable lifestyle in cooperation with other organisations. Since 1990 the management and development of research activities has been under MTT Agrifood Research Finland. Today Partala serves as a research farm where professionals and tourists can make study visits. (Partalan luomutietopalvelu) In December 1989 there were 6 organic farms in Juva (Laukkanen & Suokas 1992). These played an important role as pilot farms showing that organic farming is really possible. To-

Year	1993	1994	1995	1996	1997	1998	1999	2000
Number of organic farms	1599	1818	2793	4452	4381	5087	5197	5225
Organically farmed area (% of the total arable area)	0.8	1.0	1.7	3.3	4.8	6.0	6.2	6.8

Table 1. *Development of the number of organic farms and their percentage of Finland's cultivated area (Yearbook of Farm Statistics 2001, 248–249).*

day there are 51. (Leviäinen 2004)

During the restructuring of agriculture during the 1980s there were major fusions in the dairy industry. The Juva dairy was also shut down, but at the same time there were discussions about its use as an organic dairy. The process to reopen as an organic dairy started with a help of a project in 1990. The establishment of an organic dairy was economically feasible because there were sufficient organic milk producers in Juva and in surrounding areas. A lot of voluntary work and trust have been needed, especially in the beginning. In 1993 the dairy Juvan Luomu Oy, was opened. It is responsible for collecting and processing organic milk. They have an agreement with the big national milk processor Valio. Valio takes care of product development, distribution and marketing of the organic products (Suokas 2003, 4-6) but Juva dairy is allowed to sell these products directly to consumers in the Juva area. Presently there are seven different products including sour milk, different yoghurts, milk and cream and some new products are being developed. Today 13 % of the milk produced in Juva is organic. (Suokas 2003, 11)

The present situation of food production and processing in Juva

The number of farms has been diminishing in Juva, as elsewhere, during recent years. The majority today are dairy farms (190), but there are also others including 69 with crops husbandry, 65 with animal husbandry, 48 producing mainly fodder grass, 28 with horticulture production and 17 horse farms. (Leväinen 2003) The situation among organic farms is presented in Table 2. Approximately 10 % of the organic milk in Finland is produced in Juva. Juva cooperates with neighbouring municipalities and together these five municipalities have formed a federation of municipalities called RaJuPuSu. In the RaJuPuSu area 7.1 % of the cultivated fields is organic (KTTK 2003) where as in Juva it is as much as 15.8 %. (Leviäinen 2004; KTTK 2003) There are many organic dairy farms that grow their own fodder. Therefore the proportion of organic fields is large.

Compared to other rural municipalities, Juva has a strong food processing industry (Table 3). The industries use mostly local products, but the biggest ones also import some raw materials from elsewhere in Finland and abroad. The retailing in Juva is done by three big grocery stores, two in the centre and one a couple of kilometres from the centre

Year	1999	2003
Farms (total)	52	51
Field area (ha)	1 281	1 273
Area/farm (ha)	24.63	24.97
Dairy farms	19	14
Sheep farms	3	1
Crop farms	14	22
Beef farms	6	6
Horticulture farms	5	4
Horse farms	5	4

Table 2. Characteristics of organic farms in Juva (Leväinen 2004).

on the main road. These represent the 3 big grocery chains in Finland (KK Market, S- Market and Spar). An additional smaller store is located further away from the centre, in Nuutilanmäki.

In the grocery stores the local products are marked with a specific kind of price tag on the edge of the shelf, which makes these products easily distinguished from others (Picture 1). This system makes it easy to find the local products in normal grocery stores. This price tag is for local products, both organic and conventional. Organic products have the organic labelling as well. In addition to sale in shops, there are also farms that have direct sales (Table 4). However, most of the local products are sold in the supermarkets not in farm shops. There are no shops that specialise in organic products only (Table 5).

Compared to neighbouring areas Juva has a strong identity in organic farming. It has been promoted and discussed for almost 20 years, which is a long time in the Finnish organic farming context. Juva

Enterprise	Branch
Salico Oy	Vegetable processing, convenience /ready-to-eat salads. (conv.)
Järvi-Suomen Kalkkuna Oy	Slaughtering and turkey processing. (conv.)
Pennan Liha Ay	Processing and sales of meat products. * (conv.)
Mestariviljelijät Oy	Preparation of vegetables for sale. (conv.)
T:mi Lihajaloste Kantanen	Smoked meat products, etc. * (conv.)
Juvan Luomu Oy	Refining of milk products, organic dairy.
Rapion Tuote Oy	Flour-mill; mill products. * (Production for sales is conv., but it has a licence to mill organic and does it for private people.)
Peltolan Puutarha	Production of juices and nectars from own raw materials. (conv.)
Art Berry	Processed berries, nectars and jelly. (conv.)
Leipomo Konditoria Pähkinä Ky	Bakery products. (conv.)
T:mi Toivetuote	Bakery products. (conv.)
T:mi Savumaja S. Kantanen	Meat and processed (smoked) meat. (conv.)
Leipomo Juvalainen	Bakery products. (conv.)

* These enterprises have also direct sales at farm shops
"(conv.)" indicates a processor of conventional, non-organic, products.

Table 3. Food processing enterprises located in Juva (Etelä-Savon elintarviketalouden kehittämisohjelma 2001).

Hyötyapaja	Fish
Wehmaan kartano	Organic meat (beef)
Mycogen Oy	Horticulture
Pien-Piispala	Organic meat (beef)
Sappion luomutila	Organic horticulture
Farmiässät	Horticulture
Juvan Muumaa Ay	Organic beestings, farm tours
Väliahon luomutila	Organic vegetables and root crops, farm tours
Päivi Seuri	Organic horticulture

Table 4. Farms in Juva with direct sales (Etelä-Savon elintarviketalouden kehittämisohjelma 2001; Luomutuotteiden osto-opas 2003).

municipality has been profiling itself as pro-organic. Being organic has a marketing value and the products are exported to other regions.

Municipal kitchens as institutional consumers

Consumers in this project are represented mostly by the institutional kitchens. These were chosen because of the big volumes that they consume. Of the food that is eaten outside of the home restaurants serve about 49 %, public institutional kitchens 23 %, lunch restaurants (for working people) 8 % and cafés about 20 % of the portions. (Partanen 2003) This means that the public kitchens are a major provider of meals. According to Paananen and Forsman (2003), municipal kitchens are the channel with the greatest potential for marketing local food.

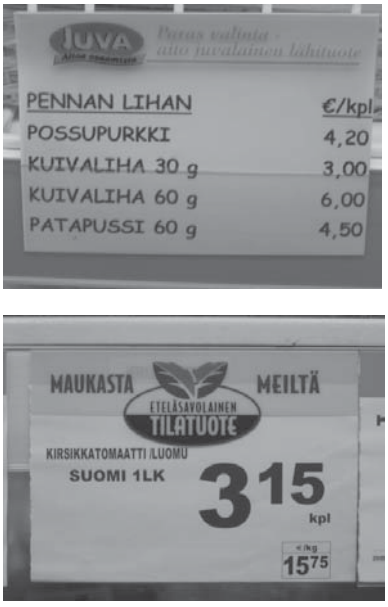
The municipal kitchens are important for several reasons. Firstly, if these public kitchens used local organic food it would make a big impact on demand levels. Secondly, these public institutional kitchens, especially the school kitchens, have an important educational task. If the ideas of organic and local food consumption reached all the pupils while at school the information would spread more effectively. Also knowing about the origin of the food creates more respect for it. Thirdly, municipalities, in addition to meal provision, are also responsible for the environmental and economic welfare of the residents and of their territories. Today this responsibility presents some major challenges that the use of locally produced organic food could help to meet. However there are still issues that need to be solved if locally produced organic food is to become a real option for these institutional kitchens. These include questions of supply, availability, logistics and costs. Interest for using local and organic products does exist.

If the amount purchased by municipal kitchens is over 200 000 euros they must follow the law on "General Terms of Public Procurement for Finland (1416/93)". According to this, there needs to be open competitive bidding before a purchase is made. Because these procedures are relatively time consuming for small units they have formed cooperatives. For example, Juva Municipal kitchens have formed a regional cooperative together with 34 other kitchens. The total amount of supplies needed is estimated and a centralized invitation to traders is made. This procedure is repeated approximately every second year and in praxis each kitchen is obligated to purchase the amount of goods they have estimated. The threshold values of the purchasing cooperative are such that vegetables, fruits and bread are actually the only groups of foodstuffs that have not been tied to this common competitive bidding. It is important to understand how this cooperative works, because it has a major effect on what is purchased and where.

The municipality has a certain amount of money in the budget that can be used for food and the matrons are responsible for staying within the given frame. The municipality itself has no interest in these purchasing cooperatives, but the kitchen staff and others who do the actual work and make the every day purchases have organised it.

Meat products	7.7 %
Dairy products	2.0 %
Vegetables, root crops	5.6 %
Grain	8.3 %
Bakery products	11.6 %
Total	**6.6 %**

Table 5. Share of local (includes both local and local organic) products of total sales in S-Market, Juva (Hartikainen 2003).



Picture 1. Local products have their own label. The picture on top shows the label for products coming from Juva. The other label is for the products coming from the county of South-Savo.

Representatives from the different municipalities or bigger kitchens make the decisions based on the tenders received. One problem for the producers is that one or two years (duration of an agreement) is too short a time to develop the local organic chains, because investments and planning have to be done for a longer period of time.

Projects as part of the food system

The strategy of diversifying production and being a rural municipality with strong agriculture base has been successful in maintaining and even increasing the farm acreage of the municipality even during EU membership. Food production has been consciously chosen as a core municipal strategy, also for the future. Juva wants to be a rural municipality that builds its welfare on farming and food processing. Through research and development projects the municipality tries to guarantee that the small firms receive the latest information. (Laukkanen 2003.) Many projects have been implemented that substantially promote organic and local food production and consumption in Juva. The will to develop local organic food systems has been in the background in planning these projects. This general ambition to increase the use of the local organic food has in praxis included many smaller initiatives and projects.

Organic farming in Juva has the MTT research station as well as the Partala Association as important supporting structures. In the case of Juva it could be said that the driving force has been the interest to increase the use and production of organic food and more recently also even local food. Many different projects and activities have been useful and necessary in reaching this goal. Many of these activities have been funded by different EU- programmes. Leader is one such programme. This initiative to "increase local/ecological food" has therefore no documented history, but it is built up around a couple of strong, stable actors/institutions[1], support from the municipality and a common goal. Different projects have, of course, different visions about how to reach the goal. Some of the projects have concentrated only in Juva and neighbouring areas while others have been implemented at the national level. A brief description of these projects is given below.

1) The project **Elinvoiman eväät** concentrates on finding ways to use local food in municipal kitchens. There is legislation concerning purchasing by municipal kitchens. Therefore it is highly relevant to know how a call for offers can be made that both comply with the legislation and also do not exclude small and local producers from making an offer. In practice the project has helped buyers draw up offers in a way that facilitates the participation of local small-scale producers. The project also gave ordering software for testing to the staff

1 "Actor" in this paper is a person in a food chain. It can be a farmer, shop keeper, developer, consumer, producer or something in between.

in municipal kitchens and some deliverers. This project is a nationwide and has pilot areas in different parts of Finland. One of the pilot areas is in Mikkeli, but it works at the moment as an independent project.

This project is run by Efektia Oy, which is an enterprise mainly owned by the Association of Finnish Local and Regional Authorities. The project is funded by the Ministry of Agriculture and Forestry, Association of Finnish Local and Regional Authorities, MTK the Central Union of Agricultural Producers and Forest Owners. Elinvoiman eväät is a response to a problem that the steering committee of a project called "Renewable food services" identified. During this project different needs and themes were discussed in the steering committee. The promotion of local food was one of them. Because of its wide relevance it became a separate project.

2) a) **Makuapaja** develops new ways to process and use local products in municipal kitchens.

In Juva there is an experimental kitchen where processing of local products can be tried out and developed. The initiative to this project came originally from one association (Rural Women´s Advisory Organisation) and small active entrepreneur groups. Due to the growing interest from both producers and consumers the project has grown and led to the setting up of an experimental kitchen. The present project has been preceded by two others.

b) **Makulog** concentrates on the logistical questions. This project was designed by advisers, economic developers of the municipalities and local food producers and other interest groups. Many small producers used a lot of their time for transporting products to shops. This project tries to find solutions for such problems.

c) **Elintarvike- ja maaseutuinnovaatiot RaJuPuSu-seudun voimavarana** *(Food and rural Innovations as a RaJuPuSu regions' resource)*. The basic idea is to concentrate on a sector that is most important to the region and find different ways to support the activities.

These three projects are run by RaJuPuSu which is a federation of five municipalities (Joroinen, Rantasalmi, Juva, Puumala, and Sulkava).

3) **Consumers, decision makers and local or organic food**
This project examines, nationwide, how consumers define local and organic food, how willing they are to use it and how much they trust it. It is run by the National Consumer Research Centre (coordinator), VTT Technical Research Centre of Finland, MTT Agrifood Research Finland.

4) a) **Rahti-raitti** finds and presents different logistical systems for products and materials for small and medium size enterprises.

b) **Eteläsavolaisesta raaka-aineesta palvelutuotteeksi**
This project started because there was a need for consumers and producers to get together. One of the main constraints hampering the use of local food is that producers and buyers do not know who to contact and what to do. This project connects producers to the end customer – the clients of the kitchen. The development of new recipes has been one practical outcome of the project. Logistics and marketing have also been developed.

c) **Cultural heritage**
Culinary experiences within the tourist industry and business development (logistics) in the South Savo are two projects run by the YTI Research Centre in Mikkeli.

5) a) **Local food systems: impacts and learning challenges** (Lofo) is a nationwide multidisciplinary project which studies Juva and Rajupusu-area to find out more about the effects that the use of local food has on municipal economy, cooperation, landscape and environment.

b) **Valttikorttina luomuvihannekset.** This project aims to develop organic vegetable farming methods and to improve the competitiveness and profitableness of organic vegetable producers in South Savo. The agricultural expert organisation ProAgria works together with farmers to reach this goal.

c) **Baltic ecological recycling agriculture and society (BERAS)**
This project studies the economical, ecological and social effects that local food has on the area. It is an Interreg III B funded research and development project with partners around the Baltic Sea.

The University of Helsinki, Mikkeli Institute for Rural Research and Training, and MTT Agrifood Research Finland are involved in these three projects.

6) **Label for local products** was a project that was planned and financed by the farmers, processors and shopkeepers in Juva. Their interest was to create a truly local brand name. An initial meeting was held in the beginning of 2001 where local shopkeepers and producers were present. Prior to this some of the farmers had collaborated but widening the cooperation to include the shopkeepers opened new possibilities. The necessary money was contributed by all concerned: the municipality, producers, processors, buyers associations and shops. Every one received a starting package after only three months. This label is used in all the grocery stores in Juva.

The BERAS- project cooperates with several of the other projects, which are run by different extension organisations in the region. Most projects

need actors (farmers, entrepreneurs, officials, shops, developers etc.) from grass root level, and the number of such people is limited as is their time to get involved in new initiatives. Therefore cooperation is important so that the different projects do not go to the same people again and again, asking similar questions. In addition participation in a project often requires a small amount of money and if the actor does not feel that he or she has received something useful from the project, their reluctance to join new projects increases. This would result in a situation where it would be very difficult to get these actors involved in the projects and there is no sense in having a project if the local actors are not interested in it. This is a real risk, when there are several projects in a small area. Links among projects serve as a forum for all the project actors where they can get information from each other or become aware at least that other projects exist. At the same time it gives developers a broader view of what is currently being done in the region. This increased awareness of other projects and the broader picture will help guide discussions and planning of new projects and in this way help bring continuity to development work and research.

Future

One of the bottlenecks in Juva and the neighbouring municipalities seems to be that the supply has not reached the required volumes. Production from one farm is not enough to meet the needs of the kitchen. And even if the production itself were sufficient, the level of processing is usually not in line with the demands of the kitchen. The kitchen needs carrots processed in different ways – farmers have carrots that are not processed at all. So both the issues of quantity and degree of processing provide challenges that need to be addressed. These problems were addressed in an actor meeting held in Juva in December 2003. (See Appendix 1.)

According to the research of Marsden et. al (2000) in the UK, there are various options. One is that farmers form some kind of cooperative (to provide needed quantity and steady supply); another option is that there is a middleman (see also Marsden et.al 2000). Whatever the solutions might be, it is clear that these projects must work in a way so that local institutions are strengthened and able to carry on project activities after the project has come to an end. If the resources and responsibility remain in the project, activities will come to an end when the project comes to an end. During the project it is possible to work together to create something new and sustainable.

One possibility builds mainly on the institutional kitchen units because they are big and relatively stable consumers in the region. However, the legislation concerning public purchasing coupled with these kitchens' limited budgets does limit the extent to which they can commit themselves to purchasing locally-produced organic food products. These kitchens have made their needs clear to producers, i.e. farmers. They need more "ready for the pot" products. At the moment

there are too few small scale processors to meet this demand. One solution is that farmers start processing but this would require considerable investment on their part. If farmers try to respond to the needs of the kitchens what do the kitchens and other customers need to do to facilitate this? Who is best suited to provide the needed services and how can the necessary long term investments be financed?

Both farmers and developers at the municipal level have been working with these issues. A couple of farmers collaborated in an attempt to process carrots and other organic vegetables for institutional kitchens. Despite the cooperation between the farms and the staff at the municipal kitchens it proved to be too much additional work for these individuals who already had full time jobs. The development phase of manufacturing is demanding – both in terms of time and experience if effective processes that are economically viable are to emerge. There are plans at municipal level to work with this and find a solution how to organise peeling of local root crops including potatoes. Logistical systems for distribution already exist but they need to be used more and further developed.

The initiative to develop local organic food systems seams to be moving ahead slowly but steadily. The municipal council of Juva has passed resolutions for using more organic food in municipal kitchens. The matrons in the kitchens are interested in using locally produced organic food – within the given budgetary limits. The concept of local food is becoming more familiar among many different practitioners, providing new opportunities for its use. Despite this the concept is still vague and is often used to refer to different things. Depending on the perspective local food can mean food produced in the same municipality, food produced in Finland and everything in between.

Puumala (2900 inhabitants) is one of Juva's neighbouring municipalities. Their poor municipal economy has put pressure on them to find ways to cut expenses. One option under study is combining the small municipal kitchens into one bigger centralised kitchen that would deliver food for all the others. At the moment the day care centre kitchen uses almost only organic food that is locally produced, and with the help of personal contacts and direct sales it is possible to produce meals at a competitive price. There is a fear that if there were only one big kitchen the use of organic food would stop due to two main problems: the lack of supply of big amounts of organic food and the pressure to cut prices.

Discussion

Obstacles and possibilities

The local and local organic food in Juva has been actively promoted for some period of time. The initiatives have been coming from many different interest groups including farmers and government officials. As a result many different projects have been launched. Developing with the help of projects has been a typical feature for Juva. These projects

are stable and active because those who participate come from stable institutions such as the federation of municipalities or research organisations. Presently there are several projects that have both local and national level connections.

It seems that the concept local food is well recognised in Juva, though it still has various meanings from being a national product to a product produced in one's own municipality. The activities for promoting local and local organic food have also been successful. This is evident from the many direct connections between municipal kitchens, shops and farmers. Local products are available in the supermarkets and can be recognised as such from a local label. Organic food also offers possibilities, as the organic dairy in Juva shows.

Local purchasing has to compete with big national and internationals markets. As kitchens are forced to restructure into larger units it often becomes more difficult for single farmers to compete with various wholesalers. Maintaining direct contact and direct sales provides opportunities for new ways of organising things and therefore most likely also more work – either for the buyer or for the seller. Is one of them in a position to take such an initiative? How does the kitchen's demand to have few invoices and orders relate to this practice? What does it mean to the farmer if she/he is able to occasionally sell part of the produce through "unconventional" ways from time to time? How could this cooperation be encouraged? These questions represent some of the future challenges in developing local food systems. Developing these also means defining "local" over and over again.

From the perspective of the municipality there are some constraints for them to use local and local ecological food. Kitchens need to ask for tenders for all the purchased products, and generally the cheapest should be accepted. There are of course possibilities to use other criteria but it has to be explained and justified. There are also issues concerning budget limitations. At the moment there is insufficient information about the multiplicative effects that the use of local food has on the local economy and therefore it is difficult to calculate its value. Issues of scale also need to be addressed. With today's existing socioeconomic structures processors need certain production volumes for an activity to be profitable. Often the demand in one municipality is not enough. Also the investment costs can be relatively high in the beginning. In addition farmers need both time and interest to make contacts and market their products locally. It is not possible for all to invest the extra time needed to build up the local food system. Despite all these constraints some people have been championing the cause of local and organic food for many years. They have taken part in projects, discussions and activities, but they have not seen a real movement for local organic food evolve. They are getting a bit tired. They would like to see something concrete happening, not just attend meetings and seminars.

Developmental questions posed by BERAS

Promotion of local food is a two way process. The genuine will for doing it has to exist or be generated in the region and at the same time ideas, encouragement and help can be brought from outside, for example by projects like BERAS. One of the basic ideas of BERAS WP1 is to include the actors in the research process so that discussion between the researchers and actors is a genuine two way process. Researchers ask how and why something is the way it is and also try to understand the actors' point of view and support existing initiatives. Both the *process* of exchanging information and thinking about different possibilities as well as the end result are important.

The concept of local food will have different meanings in different situations. For some, local food can be made of foreign raw materials as long as the processing and work is done close by. Others have much stricter criteria for local food. It seems that different products require different levels of locality. It is important to understand these different situations and perspectives. Despite how it is defined, however, it is clear that local foods require another kind of supply chain than buying from wholesalers.

The simplest network is here understood as a connection between two actors. One question is how more contact between the producer and consumer can be created. In general, this connection is weaker than wished or needed for developing local food. Stimulating the sharing of information about present challenges and future perspectives seems to be one of the main possibilities to create interaction between the actors and through that also cooperation can emerge. The BERAS project is trying to increase cooperation among local actors in order to make the supply and demand fit. Knowing about the origin of the product brings respect to it. One relatively easy way to "give face to the food" is to present the farmer who is producing the food. Consumers also have certain wishes and suppliers need to be able to meet them somehow. Is it possible to get the customer networked to the natural environment? Do the matrons feel that they have an educational task in addition to cooking nourishing food?

Conclusion

It is clear even from this short introduction to the Juva case that the issue of increasing local organic food production and consumption is very complex. Active, interested people are needed to promote local food at all levels of society. Different regulations, laws and instructions constitute constraints. In addition to these limitations there are the present trends, instructions and eating regulations that influence every day actions. Combining all these is not simple, but experience indicates there are ways to overcome the problems. A necessary, but not always sufficient, requirement is cooperation between the actors. This often requires time, effort and resources that are not always available. Sometimes these efforts are rewarded.

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Appendix 1.

Obstacles and solutions identified in the actors' meeting / Juva December 8th 2003.

Actor group	Obstacles	Solutions
Producers	• diverse vegetable production takes time • packing, pre-processing and marking takes time • payment to farmers for bread grain is too low • waste regulations eliminate small slaughterers • there are no (almost no) processed products from organic meat • prices, price relationship between producer/ shop	• cooperation between the farmers • the time for bidding on offers should be changed
Processors	• starting up processing • to get the logistics to work well • small volumes • municipal kitchens; many small kitchens where the products should be delivered, prices, packaging • handling of small amount takes lot of time • bureaucracy, book keeping • investments in machinery vs. small volumes • broad selection of products makes cooperation difficult • transportation of small volumes • availability of quality grain has diminished • municipal kitchens need good quality for a low price • transportation • ergot	• cooperation in marketing • cooperation with shops
Municipality	• processing is needed • there is no will	• Cooperation with a big company
Kitchen	• products should be processed, ready for the pot • greater selection of vegetable is needed (fresh vegetables from Juva, ordering from one place and delivered to the kitchen • ordering small amounts directly from the farmer • ordering • availability • right amounts = packing size • rate of processing • logistics	
Retail	• small amounts • ordering	• showing the value to the consumer • producers take care of the shelves by themselves • setting the price of the products
Consumers and Teaching Kitchen	• price, availability, storing • many opinions • untreated turkey (and chicken) is not available	• small amounts available, juicy appearance, unpeeled • Organic kitchen centre in Suonenjoki
Research	• research and development takes time • low productivity of organic vegetable production leads to too independent activity of the farm • amounts in production are low, not there when needed	• kitchens report their monthly requirements to a list • producers have an organisation for cooperation • logistics – how will the supply be coordinated?
Organic	• transportation did not start	• sales of the Saimaan Luomu • shopping guide of the organic products

Summary of the present situation:
- potential does exist
- problem is the small volume in the region.

How to go proceed?
- Get information about the logistical systems and terminals of Suur-Savo
- Resepti –Reetta (computer in a shop which gives out recipes; ideas for cooking)
- Quantified data about local economy is needed for county cooperation and decision makers
- Environmental information is needed (for use in marketing)
- People passing by and summer residents need to be noticed
- Cooking on a "local food-day"
- Use of Makupaja (experimental kitchen)
- Markets
- "Summary day"

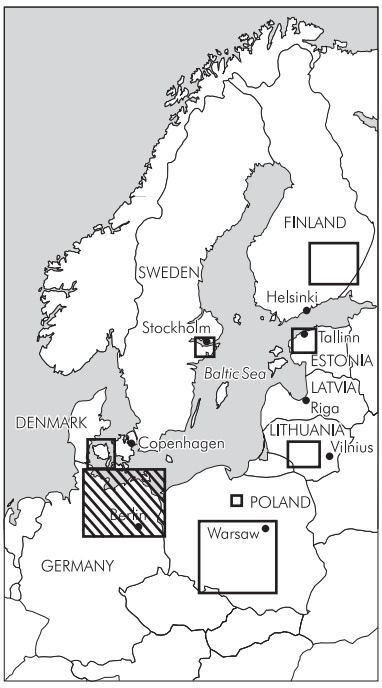
BIORANCH ZEMPOW, GERMANY – An organic base for local development

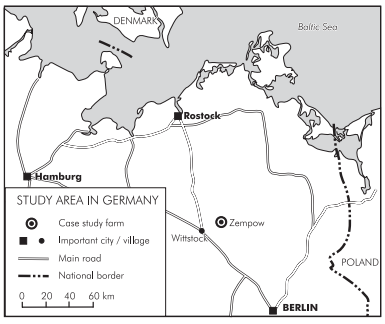
Holger Fischer

Introduction

The German case consists of the Bioranch Zempow. The active involvement of the farm manager, his family and partners in issues of sustainable local development illustrate how hard work and commitment can make a difference. The case itself includes several initiatives and enterprises that act as economic and/or political entities but which in many cases are run by the same people. They often join together for common action.

This description is based on material and information retrieved in different ways. One important source was interviews with the farmer and his wife both of whom play an active role in Zempow. A good historical overview, in German, of what has happened since the founding of the farm business was available from the homepage of the Bioranch Zempow (www.zempow.de). Statistical data was obtained from the official Brandenburg Bureau of Statistics, the German Meteorological Service (Deutscher Wetterdienst, DWD) and the Federal Employment Office, Wittstock branch.





The municipality

Geography

The village of Zempow is located about 90 km northwest of Berlin and lies within the federal state of Brandenburg. The nearest cities are Wittstock (13000 pop.) and Rheinsberg (6000 pop.) both roughly 20 km away from Zempow.

Zempow lies between 63 and 99 meters above sea level in a zone of transition between temperate maritime and continental climates. The long-term average rainfall is about 530 mm/year with considerable

Year	Temperature [°C]	Precipitation [mm]
1995	8,82	547,4
1996	7,22	368,9
1997	8,93	405,8
1998	9,14	750,5
1999	9,65	622,6
2000	9,87	530,0
Average	8,94	537,5

Table 1. Temperature and precipitation at Wittstock-Rote Mühle meteorological station (15 km from Zempow) from 1995 –2000.

variation between the years (see Table 1). The long-term (1950–1999) average temperature is 8.6ºC.

The dominant soil types in the area are sand with little content of silt and organic matter and moor from degraded highland moor. The region was shaped by the last ice age and is composed mostly of frontal moraines that have been reshaped by wind and water erosion. Within the German model of agricultural soil classification (0 to 100 where 100 represents the best soils ever found in Germany) the average value of the Zempow soil is 19. It is therefore regarded as a marginal site.

Demography

The village of Zempow has 142 inhabitants and a total area of 9.1 km^2. As of October 2003 Zempow belongs to the municipality of Wittstock due to a local government reform that merged smaller municipalities into larger new municipalities. The enlarged municipality of Wittstock has a total area of 423 km^2 and 14 500 citizens.

Compared to the German national average (230 inhabitants/km^2) the population density in the Wittstock municipality is very low (30/km^2) and even less in the village of Zempow (15/km^2).

The age structure of the population of Zempow shows a pattern that is common in rural areas especially in eastern Germany (Figure 1).

The decline in birth rate after the end of the GDR (1990) and the out-migration of mostly young and more mobile people seeking employment in urban areas has lead to a shift in the age structure. The average age has increased and the number of children in the municipality has decreased. The situation in Zempow is somewhat better compared to adjacent villages. The jobs created by the Bioranch Zempow have brought some young families to Zempow. Between 1990 and 2003 the overall number of inhabitants has increased from 120 to 142.

The number of people in Zempow who paid social insurance in 2000 totalled 33. Compared to the total of 78 (those people between the ages of 18 and 65 who lived in Zempow at that time and who could be defined as the potential workforce) this number is surprisingly low. (Figure 2.)

The unemployment rate for the municipality of Wittstock was 22.5 % in February 2004. No figures for Zempow itself were available. These statistics do not include the many individuals who are not

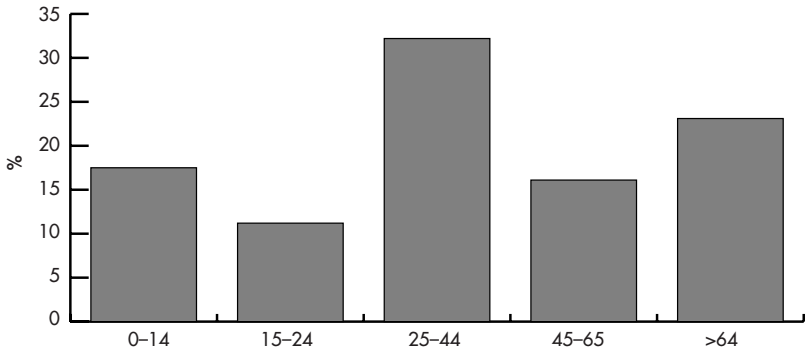


Figure 1. Age structure of the people of Zempow (as per 31.12.02).

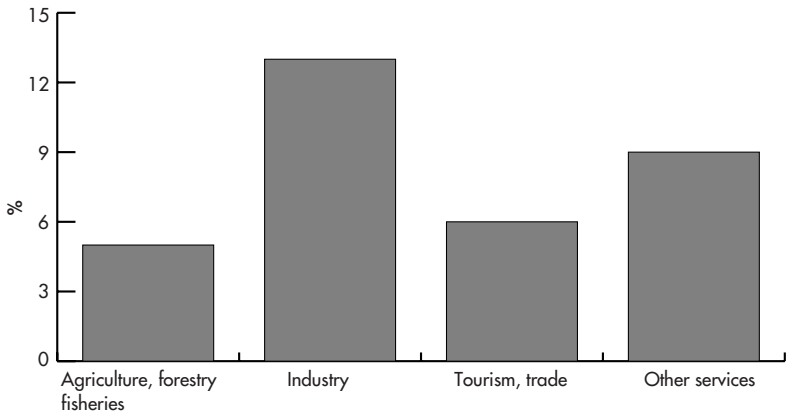


Figure 2. Distribution by sector of 33 jobholders paying social insurance as per 31 December.

registered with the employment agency for different reasons; for example because they still go to school, they are independent/self-employed or they keep house for the family.

History

In addition to the local government reform the political changeover in 1989 imposed many changes upon the political system in the former German Democratic Republic. Many of these directly affected local and regional consumer-producer relationships. Before 1989 the concept of organic agriculture was largely unknown and was not adopted by any of the large state or community owned farms in the region. On the other hand the level of locally produced and consumed food was substantially higher than today because many people produced their own food due to lack of market supply.

Recent developments have been influenced strongly by the fact that the green party joined the national German government in 1998 and especially that Renate Künast, a member of the green party, became federal minister of agriculture in 2001. Organic agriculture has been strongly promoted in Germany since. This promotion did not result in higher subsidies for the farmers but rather in a general change of government attitude towards organic farming. They have declared a goal of 20 % organically farmed arable land by 2010 as well as the promotion of research and marketing measures in the federal program "Organic Farming" ("Bundesprogramm Ökologischer Landbau").

Regional/local agriculture and society

History

On the sandy soils in the Zempow area agriculture has been practiced for centuries. The first documented record of agriculture in Zempow dates as far back as 1274. During the last 300 years there has been continuous agricultural land use. After World War II the communist party and the Soviet military administration imposed a land reform in what came to be known as the German Democratic Republic. In this land reform all farmers owning more than a total of 100 ha land were stripped of their belongings. The land was then redistributed. Anybody who

applied for land was given between 7 ha and 10 ha to form a small farm. About 50 % of the farmland in Brandenburg thus changed owner between 1945 and 1948. The short era of small farm enterprises was followed by a phase of state ordered collectivisation (1952–1960). By 1960 most marketed agriculture production was being done on large (more than 5000 ha) community owned farms. But because the technical infrastructure in Zempow was badly neglected between 1945 and 1989 production was very ineffective. In 1990 the majority of the employees at the agricultural cooperative "LPG Schwarz", which farmed most of the land in Zempow, lost their jobs. The cooperative ceased farming in 1992. Furthermore the decline in the textile industry in the Wittstock region triggered the loss of many jobs especially for women.

It was at this critical point in time that the "Bioranch Zempow" was founded by Wilhelm Schäkel Sr. and his son Wilhelm Schäkel Jr. The "Bioranch" formed the base for sustainable development in the municipality.

An important policy for the development of the Zempow farm that guided the founders was to involve all local actors. From the beginning the work was influenced by the spirit of Agenda 21. This was operationalized through what came to be known as "village cafés". Held when needed, these were organized by the Zempow farm as open meetings for the villagers of Zempow. The meetings were moderated and always worked on a special theme. There were for example working-group meetings to compile a sustainable overall concept for Zempow in 1996 and 1997. Other village cafés were devoted to such themes as wastewater management and the development of a local network of hiking trails. The village council of Zempow passed the decision for a local Agenda 21 in March 2000.

With the assistance of the German Institute for Urban Affairs a two-day workshop was held in December 2000. The main outcomes of this workshop were:

- a strengths/weaknesses profile for the village of Zempow;
- visions for local development by the year 2029;
- development goals for Zempow for the coming 10 years; and
- new projects for immediate implementation.

In order to consolidate the efforts for the sustainable development of the Zempow community dedicated citizens of Zempow established a registered association in early 1997 – the umLand e.V. The present chairman of this association is Carola Wöhlke, the wife of W. Schäkel.

Present situation

There are several initiatives active in Zempow today. These include:

I. The corporate organisation Bioland Ranch Zempow. This includes:

- The Zempow farm is owned by Dr. Wilhelm Schaekel. Founded 1992 it has a total of 830 ha of which 230 ha are permanent pasture. They

have 850 head of cattle (beef) kept outdoors year round. Nine people are employed on the farm. The 3 year crop rotation includes grass with clover and alfalfa, corn, triticale, oats with vetch, rye with vetch, seradella as a catch crop, blue lupine and rye with vetch.

- The Ökonetzwerk Müritz-Ruppin GmbH (Ltd) is now managed and owned by W. Schäkel. This firm promotes the marketing of single cuts of organic beef produced on the farm.
- The companies *Energieholz* (Energy wood) and Bio KW Ltd are both managed and owned by Dr. Falk Brune. These two companies work hand in hand to provide heating with wood-chips. The firm Energieholz produces woodchips from forest thinnings. The thinning work itself is provided as a service to forest owners. The Bio KW Ltd. installs and runs heating systems based on woodchips provided by the Energieholz business. Revenue is from the sale of heat energy (heat contracting).
- The Dorftourismus Zempow GbR (village tourism Zempow) is a private company. In 1996/97 they built a holiday apartment complex that they now run. It used ecological criteria and building techniques in its construction.

II. The umland e.V.

This association is the successor of the initiatives for sustainable development of the Zempow community that were active since the early 1990s. Its main interest is to contribute to the conservation of the natural resources by fostering organic agriculture and the ecological and social evolution of the municipality. Three nature trails were created and information about local wildlife and organic farming was provided to hikers. The umland e. V. holds meetings and workshops covering topics ranging from practical problems in organic farming (e.g. animal welfare) to agricultural policies. It also is actively involved in the organisation of village festivities like the harvest fair.

III. Marions Laden (the village shop)

Although the village itself does not have many inhabitants a small shop still exists in Zempow. After the workshop in 2000 the range of products on offer was enlarged by natural food products and beef and beef products from the Zempow farm. The tourists on holidays at the Bioland Ranch Zempow belong mostly to the eco-clientele and appreciate the opportunity to buy local food at the shop.

IV. Local/regional food processing

The output of the Zempow farm is still almost entirely beef. The cattle are slaughtered in different places, depending on where they will be marketed. For local and regional marketing the cattle are brought to Hakenberg, roughly 60 kilometres from Zempow. For marketing outside the region the cattle are slaughtered in Anklam about 120 kilometres from Zempow. The farm also sells about 90 steers per year to a butcher

in the western part of Germany near Hildesheim, about 350 kilometres from Zempow. This is a longstanding contact in the organic beef sector.

The proportion of beef sold to Berlin is about 30 % of the farm output. Most of it goes to "Feindura", a Berlin butchery that has three stores and sells organic meat and meat products only. A smaller portion is sold directly to shops as frozen meat. The shop owners can rent a freezer from the Zempow farm who stocks it on demand or on a regular basis.

Since 2002 the farm has grown roughly 20 ha topinambur (Jerusalem Artichoke: *Helianthus tuberosus, L.*). Their roots are pressed and the juice is mixed with the juice of common sea buckthorne (sandthorne: *Hippophane rhamnoides, L.*) that is bought from an organic producer in Brandenburg. The juice is produced and bottled in Brandenburg and is sold through the meat marketing channels. The topinambur-project is an attempt to diversify the production of the farm by raising new crops that are suitable to the soil and climate conditions of the Zempow area.

Future

To date there is no capacity for the slaughtering of cattle and the processing of organic meat in the region. To overcome this obstacle the purchase or lease of a mobile slaughtering unit is being considered. However such a unit only exists on paper at this time in Germany. As there are clear benefits as far as animal welfare, transportation and local processing are concerned, the farm together with the German BERAS staff plan to contact an initiative promoting the use of mobile slaughtering units. The initiative (www.mobiles-schlachten.de) has already developed the concept of such a mobile unit. The construction has not taken place yet due to lack of sufficient capital and concerns about the compliance with German and EU hygiene regulations.

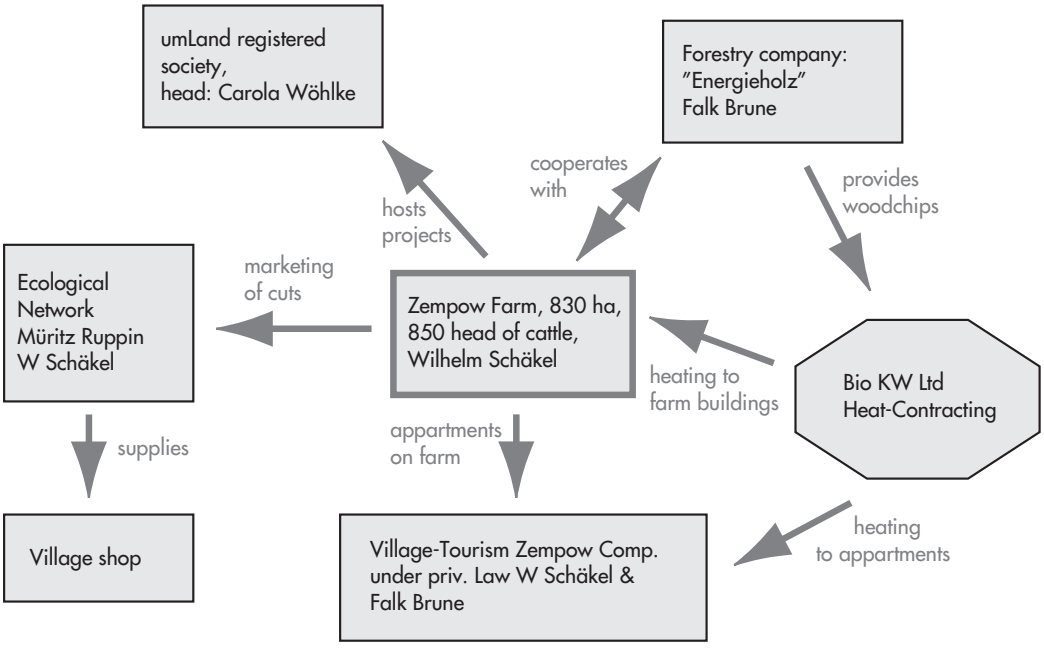


Diagram 1. The structure of the "Bioland Ranch Zempow".

The Buchfinkenhof is a project of the umLand e.V. An information/education centre for the public will be set up at an old homestead in Zempow. It will show and explain the relationship between the development of the (local) rural area and landscape and its land utilisation by human beings. The changes in local culture over time and the development of food and consumption habits will be central themes. The facilities will include a set-up of multipurpose rooms including an educational kitchen, a shop, a laboratory and a show garden. These will allow for different events around the general heading of sustainable rural development. The possibilities of the farm and BERAS to jointly raise money for the project are currently under discussion.

Discussion

Obstacles

Even though the Bioland Ranch Zempow and its subunits are well established both in Zempow and in the municipality of Wittstock to which Zempow now belongs, it is important to note that only a minor part of its overall production is sold locally. This is due to the special conditions that prevail following the total political turnover after 1989. For example, the rise in consumption of organic food in Germany is mostly driven by the more highly educated students and young families. This is the group that has left and continues to leave the region due to lack of employment opportunities. Although this trend may be reverted in Zempow itself this is not the case for the region as a whole or for the municipality of Wittstock. In addition the high unemployment rate in the region reduces the amount of income available and limits the willingness of people to buy the more expensive organic food.

Moreover, the definition of local/regional has to be given some special thought in the German case. The settlement structure of the Berlin/Brandenburg area at present is very centralised. On the one hand there are the densely populated areas. These include Berlin and the surrounding inner circle of Brandenburg where many people who work in Berlin live due to lower prices for housing compared to Berlin. Also many Berlin companies have settled here because of low prices for building land and lower company taxes. On the other hand there is the so-called outer circle of Brandenburg that surrounds this area. This outer

The settlement structure of Berlin/ Brandenburg area.

	Berlin	Brand. Total	Inner circle	Outer circle
Population	3 392 425	2 582 379	966 850	1 615 529
Population density [inhab./km^2]	3 800	88	216	65
Total Area [km^2]	892	29 477	4 478	24 999
Farm land [km^2]	44	14 657	1 998	12 659
Forests [km^2]	160	10 295	1 482	8 813
GDP per capita	21 406	16 169	n. a.	n. a.

circle is far less densely populated, has few industries and the inhabitants have a comparably low per capita income. In this area the demand for organic food is very poor.

Not surprisingly most of the organic produce and cash crops that are consumed in Berlin and Brandenburg are consumed in Berlin. This is especially true for fruits and vegetables. Indeed, most organic producers in Brandenburg regard Berlin as their local market although many of them have to travel more than 50 kilometres to deliver their products.

BERAS planned action

The farm in this case is producing organic beef but most is not marketed locally. An organic vegetable farm within the Bioland Ranch Zempow closed down production a few years ago. The vegetable farm was started as a project funded by the Federal Employment Office with one employee running the vegetable farm. When the funding ran out the person employed discontinued his work because he regarded the business risk to be too high. The soils of the Zempow farm are mostly rather unsuitable for vegetable production and the marketing structures are not well established.

To increase the amount of locally produced and consumed food in the region workshops are planned in Zempow as well as in Wittstock and other villages and towns in the neighbourhood. The focus of the workshops will be on information about the connections between local consumption and local employment. Special attention will be paid to the health resorts and hotels in the adjacent nature park 'Stechlin' and the national park 'Müritz' both about 15 kilometres from Zempow.

Conclusion

Success for large organic farms in eastern Germany depends on there being markets big enough to take up the volumes produced by them. For organic beef, demand and supply do not match (yet). The surplus production has resulted in such low prices that they are hardly sufficient for the sustainable development of organic cattle farms. The political instruments used since the beginning of the green parties participation in the German federal government proved to be effective in raising the proportion of farms producing organic meat products in Brandenburg. Consumption, however, has not kept up. Interestingly enough it is quite the opposite for organic vegetable and fruit production where supply by no means can meet the demand. According to the rules of market economy a shift from cattle production to vegetable production would be the logical consequence. This, clearly, cannot easily be done. Therefore other alternatives have to be found. This case provides examples of two of them: diversification (farm tourism, topinambur) and intensive marketing.

The people at the Bioland Ranch Zempow are very much engaged in issues of local and sustainable development. They see their business

as an organism existing in and dependent upon the local surroundings. Although it is an economic entity it has strong links, both economic and social, to the village of Zempow that provides the work force and most of the land rented out to the farm by the land-owning inhabitants.

Regarding the present situation a successful establishment of a truly local recycling based agriculture in Zempow may be a goal that cannot easily be attained. It will require a great deal of human and financial resources. The example of the Järna case shows that it is possible nonetheless. The people of Zempow illustrate that they have the commitment and passion to be successful.

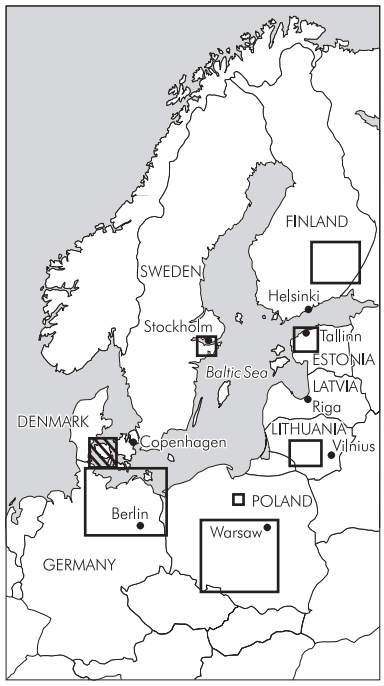
NØRREGAARD AND BAKKEDALEN, DENMARK – Support groups and box letters: innovative ways to strengthen producer-consumers links

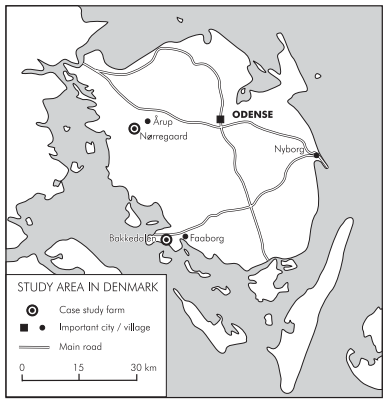
Åse Ditlefsen

Introduction

The information in this article is based on interviews carried out by the author and Artur Grandstedt. Åse interviewed Mogens and Dineke at Nørregaard and also had the opportunity to talk with most of the employees there. Artur interviewed Per and Birgit at Bakkedalen.

Both of these farms are on the island of Fyn. They have been biodynamic for 20 years and both have close relations with their customers.





The island of Fyn

Geography

Fyn is almost circular although its coast is carved with many small fjords. The total area is 3 486 km^2 and its coastline is 1,130 km (Denmark's total coastline is 7,300 km.). Fyn is surrounded by dozens of smaller islands and is situated in the mouth of the Baltic Sea between the channels Lille Bælt and Store Bælt. It is located on 55° North and 10° East.

Climate

Fyn belongs to the North temperate climate zone. The growing season starts around March 20th and lasts till November 1st. Root crops are harvested in September, cabbages in October and leeks, green cabbage and parsley in November and December.

Fyn is characterized by a moraine landscape shaped during the last glacial period when sand and clay was mixed and shaped into a hilly landscape by the ice. Many small rivers carry water to the Baltic Sea. Steep hills, meadows, moors and forest areas surround the farms. The soils have become richer in topsoil during the past 20 years of biodynamic farming, but the great variation in subsoil is still and will always be significant.

Nørregård farm lies near the village of Aarup in the western part of Fyn, 35 km from Odense. *Bakkedalen* farm lies in the southwestern corner of the island close to the Baltic Sea. It is 2 km from the small village of Horne that is on the main road ending at the Als island ferry. The nearest town is Faaborg, the distance to Odense, the "capital" city of Fyn, is 45 km and Svendborg – a town with a proper market – is 35 km away.

Population

Denmark is divided into 277 municipalities, each with a local government city centre (referred to as city in the above chart). The municipalities are self-governing in some matters e.g. schools, and municipal taxes. Fyn is an administrative district, with responsibility for hospitals, roads, the environment and levying taxes, among other things.

2003	City inhabitants	Municipality inhabitants	Area, km²
Fyn			3 486
Odense	145 374	184 308	304
Aarup	2 554	5 416	81
Faaborg	7 251	17 281	227
Svendborg	27 512	42 986	173

Population distribution of Fyn.

History

Fyn with its relatively mild climate has always been an island with small family farms. The main dairy breed was the Danish red dairy cow and later the smaller Jersey cow. There were many dairies producing excellent butter and cheese – including a special kind of smoked cheese. Many farmers produced vegetables – they are still famous for their asparagus – and fruit like apples, cherries and berries. The largest cider mill in Denmark is still located on Fyn.

The houses had timber frames and mainly thatched roofs and beautiful flower gardens. The old poetry from and about the island tells about the small, good things in life. The famous fairytale author Hans Christian Andersen grew up on this island and was inspired by the vegetation in gardens and ponds, the old willow trees along the roads and the way of life of the people here.

Danish agriculture

Danish agriculture is strongly influenced by the co-operative movement. At the end of the 19th century Danish farmers formed small dairies in each village. This was followed by successful efforts to establish the agricultural education system (which forms the base for today's advisory system), animal breeding as well as co-operative processing plants for milk, meat, grain and fodder.

The farmers' co-operative movement had influence on and was inspired by the folk high schools, which is another important feature of the Danish culture. These folk high schools have had a great influence on the public culture, the democratic development and the general education.

Danish politics

Denmark is a monarchy with a royal family with no ruling rights. At the moment Her Majesty Margrethe II is queen. A prime minister heads the government that runs the country. 12–14 different political parties are represented in parliament and general elections are held every fourth year. During the past 50 years the Social Democrats and centre Liberals

have been the main parties and have formed the government often in coalition with other smaller parties.

The government's agriculture policy during these 50 years has been to promote restructuring and rationalization. As a result there are fewer and larger farms today. These farms are more specialized, highly mechanized and employ few people. The number of food processing plants has decreased as well. Today there is almost a monopoly situation for both dairies and slaughterhouses although they are still owned by the farmers as co-operatives.

Organic Denmark

The first biodynamic farm was established in the late 1920's inspired by the teachings of Rudolf Steiner. During the first half of the 20th century a considerable number of larger and smaller farms adapted the biodynamic method. However as the national economy grew, mineral fertilizer became popular and many farms became conventional.

In 1952 the Biodynamic Farmers Association was founded. Between 1950 and 1980 more than 100 biodynamic farms were registered and a biodynamic agricultural advisor was employed. In 1982 the Organic Farmers Union was founded and some of the biodynamic farmers changed to organic production. In 1987 the first legislation on organic farming passed the Danish parliament, and national certification with the red Ø logo was established. All farmers that wanted to be certified had to formally convert to organic even though some had been organic or biodynamic for years.

Today approximately 10 % of all farms and farming area in Denmark is organic/biodynamic and the red Ø is known by more than 90 % of consumers. Both national and export markets continue to grow although the number of products sold is not increasing.

The Danish case Nørregaard

History and social arrangements

The Nørregaard initiative began at Warmunderhoff, the biodynamic agricultural college in Holland. Seven young Dutch people and a young Dane came together and decided to buy a farm in Denmark.

Their goals were to:

- build up a healthy biodynamic farm;
- create space for social work at the farm; and
- become a cultural factor in the local society as well as world wide, within the anthroposophist movement.

They bought Nørregård on January 1st 1986 and settled there as four autonomous families, but with one common economy. During the first seven years, they converted it from a crop production farm to a versatile biodynamic farm with dairy cows and vegetable production.

In 1987 Denmark got its first legislation on organic farming and

the supermarket chain FDB (now CO-OP) started selling organic vegetables. This marked the beginning of the first boom in the number of organic farms. In 1988 the first organic dairy, Naturmælk, was founded, and Nørregaard started delivering milk to this dairy. Consumer interest in organic food grew and the market for organic products started to increase.

The vegetables produced at Nørregaard were mainly sold at the market in Fredericia, the closest larger city. Even FDB (now CO-OP) and local wholesalers purchased some of their produce.

In 1993 the first young handicapped person found his way to the farm, and the social work began. This was organised as an independent institution caring for six young residents by a staff of 4 adults. The farm is used as a training ground for these youth.

In 1994 the farm started a box scheme in Odense with 25 consumers, mainly from the Steiner schools and other anthroposophist-minded people. The farm delivered a wooden box containing 10–15 kg of vegetables to them every week. This scheme quickly grew to include a national "bag-scheme". The box was replaced by a paper bag containing 5–7 kg of vegetables that the consumers could pick up at their local health shop or at the Matas shops (a chain of shops selling shampoos, skin care products, vitamins etc.). The number rose to 650 local boxes and 2 500 bags nation wide being delivered each week. Three chauffeurs and vans were busy delivering all week. Because this was the first initiative of its kind in Denmark it received a lot of attention including television and radio coverage. At the farm investments were made in a new packing hall, staff was hired, and the growth was exponential.

However all this required a lot of investment and it proved difficult to pay back the loans taken for this. This rapid growth led to many other problems as well. The increasing amount of vegetables required for the box scheme resulted in the farm importing feed for the dairy cows and imbalances on the farm. Several other farms copied the box scheme system, and competition for consumers was stiff. At the moment Aarstiderne is the largest box scheme wholesaler in Denmark with more than 35 000 boxes a week. They have almost no vegetable production at their farm.

Social initiatives

During the first years a group of 20–25 people met at the farm once a month to discuss the possibility of buying out the farm, in order to create a trust fund or a self-owned institution. These meetings helped increase understanding about the importance of land ownership and raised the awareness about the need to see farms as social units rather than just production places. This group included consumers, bank people, consultants and other supporters. After some years the initiative ran out in the sand, partly due to Danish legislation stipulating that only private people can own farms, and partly due to the combination of idealism and a large debt. (See above for more information.)

Every week, one to two pages with information about the vegetables in the box, news from the farm or the organic world and recipes are included in the box. These have provided an effective means of communicating with consumers and the collection of these "box-letters" also provides a valuable historical documentation of the development on the farm. Below are some examples of the topics covered in these letters.

Week 3, 1998: Information and debate about GM (genetically modified) food, use of GM Organisms outside laboratories and pharmaceutical companies and a discussion about the possibility of patenting animals and plants.

Week 4, 1998: Information about Biodania, a group of organic vegetable producers planning to produce a large variety of vegetables in quantities sufficient for the box schemes, as well as the supermarket. A discussion of the theme: local production for local consumption and the keyword co-operation instead of competition.

Week 33, 1998: One result of a wet summer is a 50 % reduction of the potato yield. A discussion about the Danish restriction on the use of Cu-sprayings and other countries that allow use of Cu-sprayings for potatoes as well as fruit trees. The price of Danish organic potatoes will rise – "as we are a potato eating nation".

Week 37, 1998: Information about the difference between organic and biodynamic agriculture.

Week 12, 1999: Traditions around Easter – "eating nine courses of greens", the use of eggs for playing games, decorating and as symbols of the coming year.

Week 41, 1999: Questionnaire to the 3000 families that receive bags or boxes from Nørregaard. 50% reply rate. It gave a good indication that the content of the box is sufficient for a small family, that the consumers prefer local products, but are satisfied with the information that follows the imported products. The price is right and the introduction of "new" vegetables is a good idea.

The situation on the farm: There were 5 families with 17 children, 7 employees and 3 "learners" living at the farm. The institution for the handicapped had 4 residential youth working on the farm. The farm had 55 ha of which 5 ha was forest, 50 Jersey cows, vegetable production and a bakery.

Week 49, 1999: State of emergency! A hurricane levelled part of Denmark to the ground, and Nørregaard was without electricity for several days. A handwritten box letter, no recipes, no washing of carrots and no bread. The glasshouses were ruined, the roofs of the barn and stable lost a lot of cover and some trees had fallen.

Week 10, 2000: Mad cow disease in Denmark, and thoughts about conventional versus organic approaches to farming.

Week 16–23, 2000: A serial story about the growth of carrots with drawings supplemented the box-letters.

Week 52, 2000/01, 2001: Happy New Year, review of the last 15

years of biodynamic farming at Nørregaard

Week 5, 2001: Reflections on the answers that visitors to Nørregaard gave, when asked: "What do you live from?": the politically correct – vegetables from Nørregaard; the shameless – burgers and coke; the scientist – proteins, carbohydrates, fat, vitamins etc.; the phenomenologist – vegetables, bread, milk and meat; the hippie – love in a cottage; the materialist – N, C, Ca, P, etc.; Mogen's (one of the owners of Nørregaard) answer –"I live from the life in the food I eat. Life is transformed sunlight."

Week 22, 2001: Happy to present www.norregaard-is.dk and the possibilities of informing about the farm in this way. All contact to customers is important and still done via phone or letters.

Week 26, 2001: End of bags delivered through shops after three and a half years. Other box schemes have taken over. From now on boxes from Nørregaard will only be available on Fyn.

Week 8, 2002: Description of Solhjulet, the most important organic vegetable wholesaler. More than 60 % of the vegetables grown on Nørregaard are sold to Solhjulet, and for approximately the same amount of money vegetables and fruit are bought from Solhjulet to fill up the boxes during periods when Nørregaard's own production is not sufficient.

Week 43/44, 2002: Planning. On a farm many plans have to be made: breeding plans, fertilizer plans, feeding plans, human plans over the workload, economic plans and budgets, maintenance plans, and development plans. However experience working with nature and climate tells us that something unexpected always happens, and this makes life exiting.

Week 3, 2003: Debate. One of the customers sent a letter arguing for use of the local Danish vegetables throughout the year, instead of importing lettuce and tomatoes during winter. Organic education.

Week 7, 2003: Another customer argues, that when Nørregaard buys lettuce and tomatoes from southern-European countries they are supporting global education, because the farmers there discover that costumers here appreciate the organic products they produce.

Week 10, 2003: Enough food? Can we feed all people when growing organically? Yes, says professor Eric Goewie, organic agriculture can feed 11 billion people, and give us a better environment as well.

Week 34, 2003: This week's visitors: Friday, one group from the local teachers college. Saturday: a wholesaler for dinner. Sunday: a biodynamic farmer selling his products at the market near Copenhagen had invited his customers on a tour of Nørregaard. Tuesday: 30 children from grade 4 at the local school. Wednesday: 24 children from grade 8 to help harvest the onions.

Week 48, 2003: Invitation to the Christmas market. The shop is open and ducks, meat, Christmas trees and paper cuts are sold. Usually more than 400 people visit the farm during the Christmas market.

Present situation

Since 2000 one family owns Nørregaard: Dineke Hoppen and Mogens Jensen. The size of the farm is 52 ha, including 27.5 ha arable land in a rotation with 12 shifts, 4 with vegetables, 4 with grain and 4 with clover grass. In addition there are 4 ha of forest and 20.5 ha of pasture along a small river. The farm has 10 head of cattle for meat production and produces 20 steers every year. 10–12 are reared from male calves purchased from another organic farm. In the near future a small chicken run will be re-established in a fruit orchard.

The fertilizer is made from composted deep litter. No manure is imported. At the moment the farm does not use any biodynamic preparations. A local entrepreneur does most of the heavy work: ploughing, weeding and spreading of manure, and silage making. The harrowing, seeding, planting and weeding of crops as well as the harvesting are done by the people living or working at the farm. The huge area of vegetable production is kept clean mainly by doing a good job before seeding/planting, by planting in rows, so mechanical weeding can be done and by weeding often.

Five people work full time at the farm, office, shop and the box scheme. The main production is vegetables, grain and meat.

The institution with four to six young disabled is a self-owned and independent institution. They use the farm as a training ground and are included in some defined jobs.

Nørregaard has found a balance with around 300 consumers and a delivery of 200 boxes a week. Instead of increasing the number of consumers, they now try to increase the amount of money that each consumer spends every week, by offering meat, eggs, bread and dry goods such as flour and pasta.

In order to cover their costs in the box scheme, they calculated the delivery costs and decided that no new costumers can enter the scheme if the distance to an existing costumer is more than 2.5 km. The total distance driven every week is now 400–500 km and deliveries are limited to the area around Odense. Most of the vegetables (60 %) are sold to an organic wholesaler, from whom Nørregaard buys vegetables and fruit for the boxes in off seasons.

The cultural activities at the local and national level take the form of markets – at harvest, Christmas and spring – with thousands of visitors attending. Several meetings and seminars take place, and a special room for meetings has been prepared in a loft. The farm has a good atmosphere, and many visitors come from all over the country. In appreciation of the good collaboration the farm invited all the staff of their main wholesaler to a three-course dinner when the wholesaler celebrated its 20th anniversary.

Planned future developments

Dineke and Mogens will continue to improve the "farm organism"[1] on Nørregaard. The balance between animals, soil and crop production

will be of high priority, as well as becoming a sound economic unit providing a secure future for their family and the people employed at the farm. An apple orchard with a chicken run is planned for 2004. The apples and eggs will be included in the boxes. The bakery will continue and they are making plans to open a restaurant. This will provide additional activities and income as well as fulfilling a dream.

To ensure good relations with their customers, Nørregaard sends out a questionnaire every second or third year asking for their opinions about the boxes, the box-letters and their collaboration with Nørregaard. The questionnaire is sent out in mid November (week 47). In 2003 they had a 25 % response rate and it showed that the satisfaction is high. The quality of the products is satisfactory, more than 90 % think the box-letters are very important and the price and the amount are fair. Some think there are too many Danish products while others think that there are too many imported goods. 50 % would like to be able to buy other products as well, and everyone appreciates the offer to visit the farm 3 or 4 times a year.

Discussion

Nørregaard has been through a lot of changes and is now developing into an economically healthy family farm based on organic and bio-dynamic principles. Nørregaard has a good "farm organism" with healthy connections to the surrounding nature and landscape as well as the local society. The many visitors show that the farm is a great inspiration for people in Denmark as well as other countries in Europe.

The main obstacle is to adapt to the future economic situation. This will require finding niches that are of interest to the owners, suit the present production at the farm and supplement the income. The increasing development of Internet shops, farm shops and nationwide box schemes is a threat that Nørregaard is aware of and working with.

The BERAS project will follow-up the developments on the farm through another interview in about a year.

The Danish case Bakkedalen

History and social arrangements

In 1983 Per Uglebjerg bought Bakkedalen and immediately converted it to biodynamic practice. Per was inspired by some of the old biodynamic farmers in Denmark and Sweden and the farms where he had practiced. During his years as a farmer, people like Bo Petterson and

[1] Farm organism" is an expression used in biodynamic terminology. "It comprises everything belonging to the farm and living in it – soils, livestock, crops, the people who work or live there, as well as the wild plants, copses, ponds and streams, wild birds and insects, wild animals, the local climate, the seasons and their rhythms. All these form a living structure of mutual interaction that under the guided hand of man produces food and fodder. It can be self-sufficient and additions from outside should be kept to a minimum. "Organism" is meant merely as an image of a complicated totality but is a realistic term indicating an existing reality" Biodynamic Agriculture – an introduction, by H.H. Koepf, B.D. Pettersson & W. Schaumann.

Max Simonsen were a great inspiration to the biodynamic movement. Today Per is keeping up the good work with old species of grain. In collaboration with Aurion, a biodynamic/organic bakery in northern Jylland, and Hans Larsson at SLU Alnarp in Sweden, he is working to bring some old species from the gene bank back into production.

The farm has developed into a harmonic organism with total self-sufficiency. The farm produces feed for the animals, vegetables for the support group and for the market and a small amount of grain, especially seed grain. No manure is imported, and all manure from the animals is carefully prepared with biodynamic preparations (502-507) and composted before use. The land is sprayed with preparation 500 and 501 at least twice a year.[1]

The crop rotation is done in a manner that strengthens the resistance of the crops and diminishes the competition from the weeds. All the biodynamic preparations are made on farm, and twice a year Per hosts the group of biodynamic farmers on Fyn who gather to make these preparations. The work is planned and carried out in accordance with the cosmic energies to help strengthen the quality and balance the fluctuations, such as drought, harvest yields, weed and pest problems.

The surrounding nature has been cared for as well. Biotopes have been created for flying birds and insects as well as reptiles, ants and hibernating animals. Diversity is one of the guiding principles on this farm. Also the social and artistic environment is nurtured in order to make the "farm organism" more living and creative.

Social initiatives

In 1995 a support group was created. See the home page: www.bakkedalen.dk. The following is a translated extract from the information presented there.

All support group members have allegiance to Bakkedalen either as friends or customers and want to support this farm and ensure the supply of biodynamic vegetables. For this reason the support group has taken the name Bakkedalen. They buy produce from the farm and help out during peak seasons. The group has also supported small projects, e.g. a green house and an irrigation system. The most recent project is the construction of a new (organically build) barn, so Bakkedalen can be seen as a harmonic farm, where biodynamic farming can be taught. (Children from Steiner schools are already being taught there.)

A membership is binding for one year at a time, corresponding to one growing season, i.e. April to March. Two kinds of membership are available:

1. Support membership means you support economically as well as through voluntary work – periodically and according to one's

[1] For more information see literature on biodynamic agriculture, including the literature reference in footnote above.

physical capacity (in the yearly spring and seed day at the end of March).
2. Support membership with 4 fixed workdays per year and buying vegetable boxes. The workdays are fixed during the growing season, mainly in April, May, June and September/October. Workdays are announced in the first newsletter in February. You must sign up for at least one box. The price for one large box is 3 600 DKK a year (25 % below market price). A small box is 2 250 DKK a year. Payment is due in the beginning of April. If you have not attended the four workdays you pay 300/187 DKK (large box/small box subscriber) for each missed workday at the end of the year. Prices are determined for one year at a time at the annual meeting in January.

The vegetables are mainly those produced at Bakkedalen. They include potatoes, carrots, parsley root, parsnips, celery, cabbage, beetroots, parsley and chives and during the summer lettuce, tomatoes, strawberries, corn etc. The assortment changes from year to year depending on the wind and weather. It is possible to order additional products at the normal market price and they will be delivered together with the weekly box.

The membership fee is 150 DKK a year. This includes some regular activities, such as the annual meeting, which usually begins with a lecture or a discussion, a picnic on the third Sunday in August and a harvest celebration on the last Saturday in September (the Michael celebration).

The newsletter is published 4–6 times a year. It includes information about what is happening at Bakkedalen, some advertisements and often articles on different organic/biodynamic events. The newsletter is also a forum for the members to share their views and ideas with each other.

Present situation

The size of Bakkedalen is 10 ha, 3 ha of forest, meadows and steep grazing areas and 7 ha arable land. On average 10 head of cattle for beef production, some sheep, goats and hens make up the livestock of the farm. Since 2002 Per has also rented his father's farm Uglebjerggård 12 km away. It has had organic production since 1996 and is now converted into a biodynamic farm. Uglebjerggård has 12 ha of which 8 ha is arable and 4 ha is meadows close to the Baltic Sea. No manure is bought for use in either Bakkedalen or Uglebjerggård.

A local bakery produces bread for Birgit and Per. It uses the grain produced at their two farms but they also purchase some grain from the organic mill Aurion.

Vegetables, fruit and bread are sold at a market stand in Svendborg each Saturday morning. Some additional fruit and vegetables are 'imported' from Solhjulet, an organic wholesaler in Bjerringbro, in order to increase the range of products they sell at their stand.

The support group is still working, but according to Per: "The majority of the members support economically and enjoy the weekly boxes with high quality products, but they are not prepared to invest time and energy working at the farm. They would rather do something else in their spare time and pay a higher price for the products. Weeding carrots for a whole day or doing other farm work becomes tiresome and monotonous after a few hours."

Per Uglebjerg Jensen stresses the importance of finding the joy and meaningfulness in working with the land so that it becomes a kind of meditation. You don't have to travel to the Himalayas to experience something.

Good cooperation has developed with the Waldorf School outside Odense. To these students he is the farmer Per and they give him the respect he deserves for his work. The children from the school visit the farm in the spring and during the harvest and Per hopes that they will take with them some impressions worth keeping as memories for life. He and his wife Birgit are very much aware that the common life style of today is not sustainable. They have for more than 20 years shown that it is possible to live comfortably on a small farm based on renewable resources if you skip the middlemen and, as they have done, turn directly to the consumers interested in high quality food and environmental issues.

Planned future developments

Per plans to take over his father's farm so that he can to produce more vegetables and grain. This will also make it possible to reduce the pressure from weeds in the soil at Bakkedalen by having some years of grassland. Per and Birgit are also talking about offering a few mentally handicapped young people work at the farm. This will give them an additional income but it will also take up at least one person's time for supervision. There are no plans to further expand their arable land or number of livestock.

The support group is well established and will evolve according to the "demands" of its members. Political and economic changes will influence living conditions that will in turn affect the needs of both the members and the farm. The support group is flexible and builds upon democratic principles and engagement and will be able to find solutions to the issues in the future.

Collaboration with the local baker will hopefully increase interest in quality bread in the local society as well as secure employment for the local baker for another couple of years. The cooperation with Solhjulet is inspiring for both parties, the farmer as well as the wholesaler, and will strengthen both.

Discussion

Bakkedalen is the type of farm that you hardly see in Denmark anymore. The idealism of Per and Birgit is rare, and carried through to the small-

est details. It is a great pleasure to visit them. Their way of life and farming is a great inspiration to many visitors and could be especially relevant for small family farmers from our neighbouring countries around the Baltic Sea exemplifying many practical solutions to the challenges they face. The cooperation with the support group is of special interest as it has lasted for about ten years now, and is still working very well.

The main obstacles for Bakkedalen are economic. Buying the farm in the beginning of the 1980s means they have high interest rates and difficulties to renew their loans. This means that all future investments have to come from outside (e.g. the support group) as the income left for Per and Birgit from their production cannot cover investments. It will be interesting to see how the use of Uglebjerggård will affect the farm income and work situation.

Farm work does not get easier as you get older. Things that could easily be done at the age of 25 are more tiring at the age of 50, and today it is more difficult to find daily workers than it was in the 80s. But the change in society and political decisions might bring back the necessity of local self-sufficiency.

The BERAS project will follow-up the developments on the farm through another interview in about a year.

Contact for more information about the farms

Nørregaard

Dineke Hoppen and Mogens Jensen, Nedermarken 8, DK 5560 Aarup, Denmark

Bakkedalen

Birgit Madsen and Per Uglebjerg Jensen, Tværgyden 1, Horne, DK 5600 Faaborg, Denmark

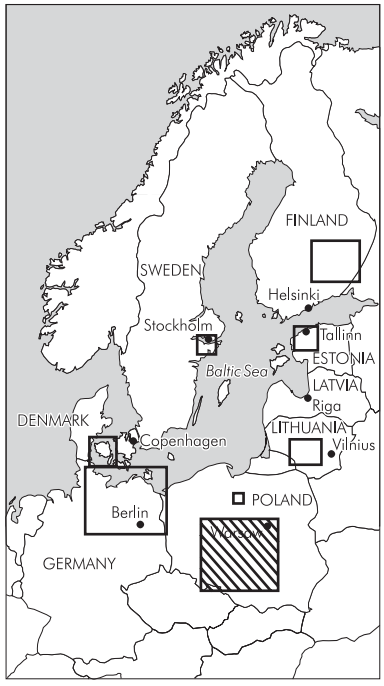
KLUCZBORK AND ZBICZNO, POLAND – Farmer collaboration and consumer awareness in support of organic agriculture for local rural development

Ewa Hajduk
& Maria Staniszewska

Introduction

Polish agriculture differs from the rest of Europe's – both from European Union countries as well as from post-communist ones. The last decade has brought great economic changes that have touched Polish farmers more than other social groups. Polish agriculture has become more extensive and environmentally sustainable – more by default than by farmers' choice. This extensive farming uses little pesticides and fertilisers but it also gives a low yield. As a result of this situation there are a lot of agriculture areas in Poland that can easily be converted to organic production. At the same time there is another trend to intensify agriculture production, linking up with structural changes and an increased pesticide use.

These case studies concern two municipalities: Kluczbork in southern Poland and Zbiczno in the north. They describe how the initiatives started as well as the geographical, agricultural and demographical context. The source of information includes the municipalities's database, web pages (e.g. www.kluczbork.pl.), Statistical Year Book, farmers' responses to a questionnaire as well as direct interviews.

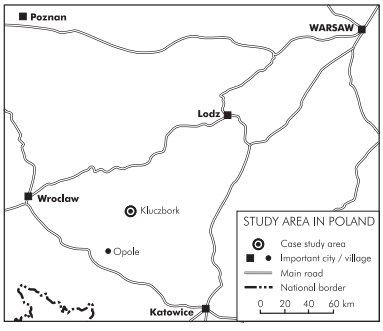


The Kluczbork case

Kluczbork municipality

Kluczbork is a rural municipality with its centre in the town of Kluczbork in the Opolskie voivodship. It is located in the south west of Poland – 40 km from Opole, 96 from Wroclaw, 205 from Poznan and 120 from Katowice.

The total area of the municipality is 217 km^2.

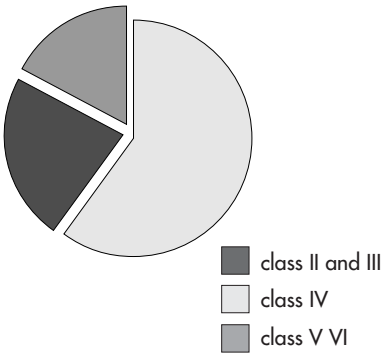


Climate

The climate in Poland is temperate. The average yearly temperature in Kluczbork municipality lies between 8.0 and 8.3°C. The average yearly rainfall varies between 410 and 839 mm. The vegetative period lasts about 220 days.

Geological formations and soils

The geological formations of the Kluczbok municipality do not contain any valuable mineral resources. The oldest rocks are limestone, marls



Graph 1. Soil fertility in the Kluczbork municipality

and dolomites. Jurassic sandstones and sands are also found here. Building materials such as clay, silts, gravels and sands are mined in the area, as is peat.

The soils are mostly poor – IVa and IVb class of fertility. On very limited areas better soils of class II, IIIa and IIIb are found, but so are soils of class V and VI.

Land use

The total area of arable land in Kluczbork municipality is about 15 000 ha of which 10 750 belong to private owners. There are 1583 small family farms (with an average size of 6.95 ha) and 5 agriculture production companies owned by the state. 70 % of the arable land is used for cereal production and in 2003 the following areas were planted:

- Wheat (spring and winter) – 3000 ha
- Rye – 600 ha
- Barley (spring and winter) – 2000 ha
- Wheat – rye – 500 ha
- Oats – 500 ha
- Rape – 750 ha
- Potatoes – 500 ha
- Sugar beets – 200 ha
- Corn – 200 ha

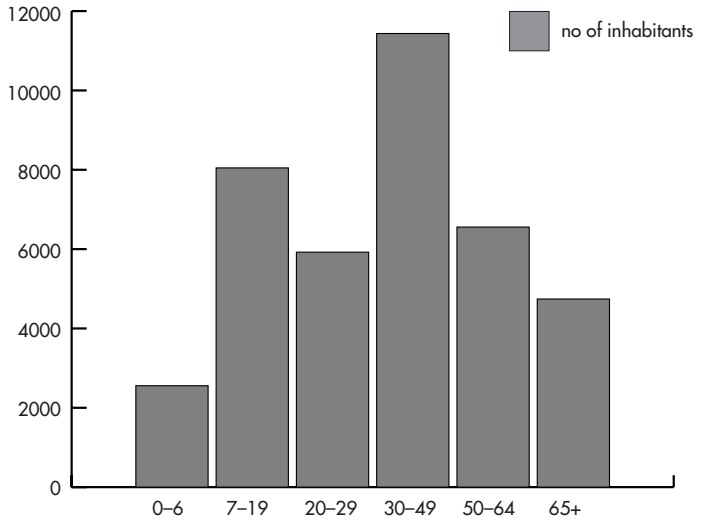
These farming households own 23 000 pigs and 2 400 cows.

Demography

The total population of the Kluczbork municipality is 39 259 persons. About a third of the population lives in rural areas, including 24 villages. The average population density is 78 people/km^2 (in Kluczbork 184). About 61 % of the population is of productive age. The birth rate is 0,7 %.

The unemployment rate is 23.9 %. This is higher than the Polish average of 18 %.

The municipality's statistics show that 1407 adult men and women were



Graph 2. Population by age in Kluczbork municipality.

employed in the agricultural sector in 2003 – 275 on collective farms and 1132 on private family farms.

Recent history

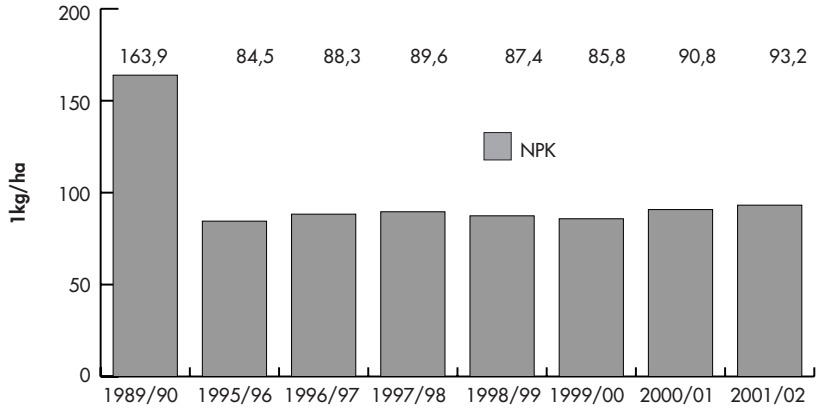
The year 1989 was a crucial year for all Polish farmers. Due to the changing political and economic conditions farmers faced great challenges. The price of agriculture products fell (i.e. beef prices dropped from 94USD per 100 kg in 1995 to 66USD in 1999) mainly due to increased food imports but also because the national support system and taxes changed. At the same time the price for processed products and services increased significantly. The result was that the small farms could not compete with the cheap, subsidised imported products.

The most visible changes in the agriculture sector in Poland are:

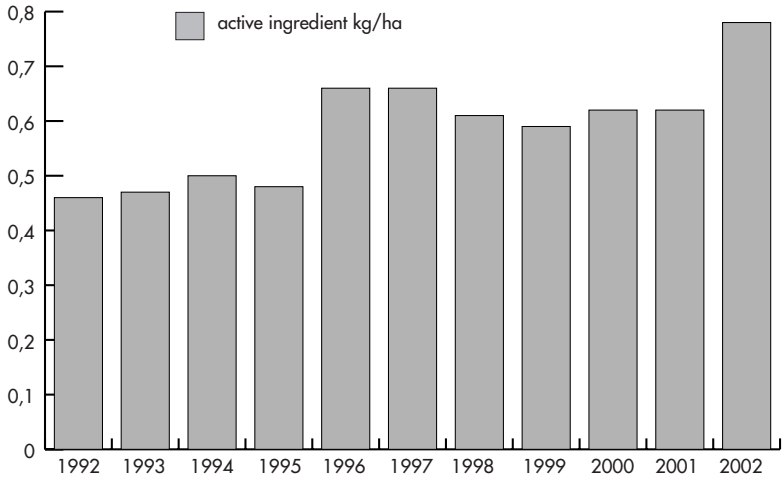
- an increase in the number of abandoned farms,
- a decrease in the amount of pesticides being used,
- a decrease in the amount of chemical fertilisers being used,
- a decrease in the number of people making a living from agriculture.

Although the trends are clear it is difficult to get reliable data on land abandonment and the number of people living from agriculture. Some information is available from unemployment and social insurance statistics but because conditions differ for farmers and other employees they do not give a clear picture. The data concerning the use of agriculture chemicals is much more reliable however only data aggregated at national level is available. (See graph 2 and 3.)

The situation described above has resulted in quite extensive production on the family farms in Poland. They are in fact much closer to organic production than they were 15 years ago. However this has not been a conscious choice by the farmers. Awareness about environmental issues is still low. The 300 % increase in organic production in the country during the past 3 years is a result of state support for these agriculture activities. In Kluczbork the number of certified farms has arisen from 1 in 2000 to 7 in 2003. These numbers are expected to increase because additional farmers have started the conversion process.



Graph 3. Average use of NPK fertiliser in Poland during the period 1989 – 2002.



Graph 4. Pesticides use in Poland during the period 1992-2002 (kg/ha).

Regional agriculture and society

The development of organic farming in Poland started in the mid 80s but the real beginning of organic production was 1989. This was the year the Association of Organic Producers EKOLAND was established and organic farms in Poland started producing. In Kluczbork the very first organic producers were Iwona and Janusz Śliczni. They began their conversion to organic production in 1990. For almost ten years they worked alone in this region, selling their products at the local market in Kluczbork and in their own little shop located in the town. In 1990 they also opened a small mill to produce organic flakes (wheat, oats, barley, and mixed) and flour.

In 2000 the Polish government decided to provide organic farmers with support for certification as well as production subsidies. This change in government policy made it possible for many more farmers to convert to organic production and the number of organic farms in Poland has increased significantly during the past three years.

Description of the farms

There are six farms, both those that are certified and those in the conversion process, included in the project. These farms will be connected by a bicycle path. A short description is given in the table 1.

The processors and distributors

The Kluczbork initiative includes only one processor/distributor – Iwona and Janusz Śliczni. They run a small mill and keep a shop in Kluczbork. The cereal processing is still being developed. Up until 2003 they only processed their own produce but now that other organic farms have started up in the same municipality they are thinking about increasing the production.

The situation in the shop is similar. In addition to their own produce Mr and Mrs Śliczni have also sold organic products "imported" from other regions. Now the situation will probably change and the variety of local organic food products in their shop will increase.

Owners	Description of the farms
Janusz and Iwona Śliczni	This farm in Biadacz is 8.94 ha, 0.5 ha of which is leased. They have been certified organic since 1993. Their arable land is divided into 8 sections. A pond for tourists has been dug on 0.3 ha and another 0.7 ha is not used for agriculture production. Most of the soils on the farm are in class IVa and IVb. Four people live on the farm – the parents and their adult children who are now studying. Although the farm's main production is cereals - wheat (winter and spring), rye, barley (winter and spring), they also produce fruit and vegetables, eg apples, peas, potatoes, fodder beets; as well as milk. They keep one cow, four pigs, one horse and four goats. They sell about 3000 l of milk yearly. They sell their produce at different outlets: cereals (processed in their own mill) – 90 % to the wholesalers and 10% in own shop; milk – 100 % direct selling; potatoes – 100 % direct selling; apples – 50 % direct selling and 50% in own shop. In addition to their agriculture production activities they also provide environmental education to pre-school and school child ren; keep their own shop and run an agro-tourist service.
Grzegorz and Jolanta Urbanowicz	This farm in Biadacz is 1.97 ha of which 1.24 is leased. It was certified organic in 2003. The arable land, 0.62 ha, is divided in three sections. The soils on the farm are in class IVa, IVb and V. Four people live on the farm – the couple, one child and the grandmother. The income from their farm is only about 10 % of the total family budget. Their main production is eggs from 150 hens. The farm also produces wheat-rye, oat, peas, and potatoes (for own use and as fodder). The eggs are sold directly to the consumers.
Józef and Leokadia Felis	This farm in Kamienisko is 12.05 ha. It was certified organic in 2003. The arable land is divided into 11 sections. Most of the soils on the farm are in class IIIb, IVa and IVb. Four people live on the farm – the couple, one child and the grandmother. They do mixed farming and grow diverse crops including wheat, rye, barley, oat, potatoes, fodder beets; corn, sunflower; and keep 11 cows and 12 pigs.
Zenon and Irena Bonislawski	This farm in Biadacz-Kamienisko is 1.36 ha and is in the process of converting to organic production. Most of the soils on the farm are in class IVa, IVb and V. Four people live on the farm– the couple, their adult daughter and another child. They do mixed farming. Their main crops are wheat and potatoes. In addition they keep 2 goats, 20 rabbits, 30 hens and 10 ducks. They sell only the wheat, the rest is for their own consumption. The income from their farm is only about 1% of the total family cash income.
Wladyslaw and Ewa Tomaszewski	This farm in Biadacz is 7.39 ha. The farm was certified organic in 2003. The arable land is divided into 7 sections. 0.38 ha is forest and 0.3 ha is not used for agriculture production. Four people live on the farm - the couple and two adult children who are now studying. They do mixed farming, growing a variety of crops – wheat, wheat-rye, oat, peas, potatoes, fodder beets, and vegetables. They keep three cows, 20 pigs, four goats, 22 hens and 26 ducks. Most of their produce is sold to wholesalers. Only eggs, milk and meat are sold directly to consumers.
Barbara and Witold Stodola	This farm in Bogdanczowice is 8.40 ha of which 5 ha is leased. The farm was certified organic in 2003. Wheat-rye is produced on 3 ha and 5 ha is pasture. The pond is 0,4 ha. Most of the soils on the farm are in class IIIb and IVa. Four people live on the farm – the couple and their adult children. The farm specialises in horses (9). In addition they keep 4 cows, 30 hens, 4 ducks and four goats. They produce 7500 l of milk a year and 7000 l is sold directly to consumers. They sell their cereals and animals to wholesalers. In addition to their agriculture production they also provide agro-tourist services.

Table 1.

The bicycle path

This initiative in Kluczbork is very recent. It started in 2000 when most of the involved farmers decided to convert to organic production. In 2003 they started cooperation with the Polish Ecological Club and in collaboration with them identified a variety of possible activities for implementation. Several meetings and information exchanges have been held. One result is the involvement of the Kluczbok farmers in the BERAS project. They will create a unique link between consumers and the organic farmers involved in the project. This will take the shape of a bicycle path that will lead consumers from farm to farm. While bicycling on this path the consumers will be able to talk to the farmers, buy products and make use of other services provided by farmers.

Farmers are interested in providing other services as a way of diversifying their source of income. One very popular type of activity is farm-based environmental education. Children can come to the farm and learn for example how to bake bread or churn butter. This will bring children closer to their food producers.

The farmers participating in this initiative promote their work at different cultural events that are organised in the region. Their farms and surroundings will also be described in the publications prepared within the BERAS project.

At the time of writing, May 2004, the first part of the bicycle path is almost finished. But this is just the first step. These farmers will need to invest much more if they are to succeed in their efforts to produce sustainably. Moreover they need much more support from the authorities not only financial but also in promotion of their initiatives.

Future plans

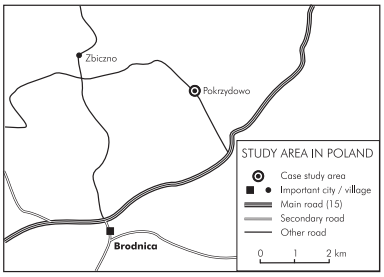
The initiative described above is a very fresh one. The only thing certain is that it has to be further developed. All stakeholders will continue to promote and draw attention to it. It is very important that more farmers, retailers and consumers become interested in such solutions in or-

Picture 1. "How to produce butter"– lesson on Sliczni's farm. Participants are tasting their production.

der to build a critical mass. This has already started – the number of farmers attending the organic farming courses increases each year and the number of organic farms is expected to increase in the next few years.

The Zbiczno case

Zbiczno municipality



The municipality of Zbiczno is situated in the eastern part of Kujawsko-Pomorskie region not far from the Poznan-Torun-Olsztyn highway.

The nearest towns are Brodnica, which is seven hundred years old, and Grudziadz and Torun both medieval. Neighbouring municipalities are Biskupiec, Kurzednik, Warminsko-Mazurskie Brodnica, Brzozie, Bobrowo and Jablonowo Pomorskie.

Of its total area of 13 290 ha 42 % is forests, and 9.7 % is covered by more than 30 lakes.

Almost the whole municipality is situated in the Brodnickie Lake District area. It is part of the "Green Lungs of Poland".

This area was shaped by Baltic glaciations. The area of moranic upland (120 meter above sea level) is characterised by single hillocks and shallow valleys with no outflow basins.

Running from north-west to south-east through the municipality is a deep and long post-glacial valley with many lakes. In the east the moranic upland falls steeply into the Drweca Stream Valley, which runs almost straight north south. Its diverse topography favours the formation of a wealth of surface water bodies. The most important river is Drweca, which marks a seven kilometres long municipality border near the town Szamrowo.

Almost the whole municipality lies in the Drweca catchment area. About 90 % of Zbiczno municipality area has piped water, and 35 % has a sewage system that is connected to the wastewater plant in Zbiczno.

Seventy percent of the municipality is situated in the Brodnicki Landscape Park area which also covers areas in four other municipalities: Jablonowo-Pomorskie, Zbiczno, Biskupiec and Kurzetnik This Park was created in 1985 as the first landscape park in Torunskie voivodship and the 25th in Poland. The flora of this Park is characterised by a great diversity and richness of species. There are about 950 species of vascular plants. Most of them are protected or semi-protected. There are also relict species. The most valuable nature areas are protected in six nature reserves. One more is being planned.

Climate

The climate is temperate and characterised by variations from year to year due to its location between a mild marine climate to the west and a harsh continental climate to the east. The average annual temperature is 7.0 °C. The hottest month is July (17.3-18.0°) and the coldest January (-3.8°). Winter and summer each last about 90 days.

The average annual rainfall is 598 mm. Winds come mostly from

the west and are moderate.

Soil types

Sixty eight percent of Zbiczno municipality has soils that are classed as quite fertile in classes I - IV.

The morainic clay and sand-clay upland soils are fertile brown and buff. In these areas agriculture is intensive. In the area close to the river podsolic soils dominate. These are poor in nutrients and therefore less useful for agriculture. Around the lakes in Drweca Valley and in others low-lying areas swampy soils are found.

Economy

The main source of livelihood for people in Zbiczno municipality is agriculture, tourism, small scale processing, crafts and services.

There are 4 720 inhabitants and a registered unemployment rate of 12 % (564 individuals).

There are 1187 agricultural holdings (mostly family farms) spread over 5 457 ha of arable land and with an average size of 12 ha.

Table 2. compares the municipality of Zbiczno to other municipalities in Brodnicki District.

History

The areas that make up Zbiczno municipality have been settled since the early Middle Ages. Many archaeological treasures found here and in neighbouring municipalities prove that these territories were settled as far back as 10 thousands years ago.

During the past fifty years the Brodnicki Administrative District has been part of Pomorskie Province with its centre in Torun. Despite the communist regime, most of the farms were owned privately.

Municipality	Area (ha)	Population		Agriculture use (ha)					Forests		Protected areas	
		Total	per km²	Total	Arable lands	Orchards	grass-land	pasture	ha	%	ha	%
Brodnica(m.)	2287	27895	1213	846	664	41	81	60	177	7.7	2284	99
Górzno(m.+w.)	11938	4052	34	5209	4556	77	381	195	5882	49.3	8004	67
Jablonowo Pom.(m.+w.)	13436	8774	65	10582	9432	45	714	391	1232	9.2	4967	37
Bobrowo	14628	6484	44	11771	10873	73	609	216	1131	7.7	3143	21
Brodnica	12696	5682	45	8653	7730	195	462	266	2242	17.7	6695	52
Brzozie	9374	3758	40	6917	6209	15	340	353	1505	16.1	7930	84
Grążawy	8335	4706	57	6287	5194	18	911	164	1337	16.0	4740	56
Osiek	7512	4292	57	6202	5548	109	386	159	621	8.3	1710	22
Świedziebnia	10383	5389	52	7546	6282	190	694	380	1763	17.0	2857	27
Zbiczno	13290	4481	34	5457	4838	23	341	255	5575	41.9	12150	91
Total District	103879	75513	73	69470	61326	786	4919	2439	21465	20.7	54450	52

Table 2.

Organic farms in Zbiczno municipality
Organic agriculture in this region started in the early eighties. Today there are 8 organic farms with a total of 85.15 ha and a varied production.

Mieczyslaw and Aleksandra Babalscy
This farm is 9.97 ha in 6 sections. The arable land is 4.37 ha, pasture 2.42 ha and vegetable gardens and fruit orchards 1.2 ha. They started organic production in 1985 and were the first in this region. Their main production is wheat and half of this is spelt and other traditional species belonging to the same family as wheat. These seeds were obtained from the Gene Bank in Radzików. In addition to wheat they produce a variety of fruits (mostly traditional species) and vegetables such as carrots and beans. They have two milk cows and two calves, bringing them an income from the sale of organic milk (6300 l per year) and meat. Two people work full time on this farm. This is not a typical organic farm focusing only on production. During the past twenty years Mr Babalski has helped and trained many other farmers to change over to organic production. He is one of the founding members of EKO-LAND – The Association of Organic Producers and has led this organisation for many years. He is not only active in Zbiczno municipality, but also in Kujawsko-Pomorski region as a whole. He is also the author of many publications on organic agriculture.

Roman and Maria Cichowscy
The Cichowski's farm is 5.74 ha divided into 4 sections. They have 5.30 ha arable land and 0.1 ha vegetable garden and fruit orchard. There is also a small area of forest. Their main production is wheat and oats but they also produce some fruits and vegetables like potatoes, carrots, root beets and big black radishes. They have nine goats, 100 hens and 15 geese. An important source of income is from the sale of eggs and meat, both goat and poultry. Five people work full time on the farm.

Grzegorz Dąbrowski
The Dąbrowski's farm is 14.25 ha in 6 sections. The arable land is 7.5 ha, pasture 2 ha, and vegetable garden and fruit orchard 1.5 ha. The main production is rye, oats and barley and spelt. He also produces berries (currents and strawberries) and vegetables such as carrots, beans, beetroots, cucumbers and tomatoes. He has two cows, 130 hens, 50 ducks and goats. An important source of income is from the sale of meat. Three people work full time on this farm.

Tomasz Dąbrowski
The Dąbrowski's farm is 14.25 ha divided into 6 sections. The arable land is 8.5 ha, pasture 2.73, the forest 2.02. The main production is rye, wheat and buckwheat and vegetables like cabbages and beans. He has two cows, calves and 170 hens. An important source of income is from the sale of meat. Three people work full time on this farm.

Aleksandra and Slawomir Findling
The Findling's farm is 5.36 ha divided into 6 sections. The arable land is 3.7 ha, pasture 1.00 ha, and vegetable garden and fruit orchard 0.2 ha. Their main production is oats and soya bean. They also produce some strawberries and vegetables like carrots, beans, celery and green beans. In addition they have tomatoes, paprika and lettuce in green house. They have two calves, a few hens, one horse and three goats. An important source of income is from the sale of meat. Two people work full time on this farm.

Danuta and Andrzej Szypczyńscy
The Szypczyński's farm is 11.61 ha in 7 sections. The arable land is 8.41 ha, pasture 1.5, and vegetable gardens and fruit orchards 0.2 ha. Their main production is mangel (a fodder beet root), potatoes and red clover. They also produce some berries, currents and strawberries, as well as beans. They have four cows and 3 calves as well as poultry. An important source of income is from the sale of organic milk (6000 l per year) and beef. Seven people work full time on this farm.

Dorota Plachta
The Plachta's farm is 16.57 ha in 6 sections. The arable land is 7.1 ha and pasture 6.82 ha. The main production is oats. She has six sheep and four horses. An important source of income is from the sale of oats. Two people work full time on the farm.

Piotr Szeliga
The Szeliga's farm is 8 ha in 1 section and 6 ha of this are arable. Rye is the main crop. Although he manages this as a hobby he sells 78 % of his production to the pasta processing plant.

Pasta processing plant in Zbiczno municipality
This pasta processing plant in the small village of Pokrzydowo has been operational since 1991. The owner is Mieczyslaw Babalski, but the plant is run as a family business. They started with old equipment imported from Switzerland and produced about 3 tons of pasta per year made from their own whole meal flour. Initially it was difficult to find customers in the village and neighbouring towns so they started selling their pasta and ecological products from other farmers (fruits, vegetables, juices) in Warsaw at eco-fests, Earth Days and other similar events. In this way of organic farmers started to cooperate and a network was established.

By 2002 production had grown to 200 tons, and the plant employed three full time and two part time workers. The variety of products had also increased. Today they produce whole meal flour and pasta from wheat, spelt and rye mixed with herbs and as well as wheat, rye spelt and oat bran and pillows from spelt husks. A professional does the bookkeeping. Wholesalers from Warsaw, Gdansk, Szczecin and Lódź

collect the products. These wholesalers also collect products such as vegetables, juices and eggs from other ecological farms in the area. A few years ago the whole meal pasta started to appear at the local market in Zbiczno and Brodnica. 2003 was an especially good year. Production increased by 40 %, they have new customers and two more people were employed at the plant.

The development of the organic pasta processing plant required increased production of organic crops. Mieczysław Babalski started to encourage neighbouring farmers to convert to organic production. Now there are eight farmers in the Zbiczno municipality with whom he collaborates closely. Their production ensures a constant supply for the plant and the plant in turn ensures the farmers of a ready market for their produce. 90 % of the rye and spelt that Maria and Roman Cichowski produce on their farm is sold to the processing plant. Dabrowski's 170 hens are feeding off the wastes from Babalski's mill. The eggs they produce are distributed by the same wholesalers who collect the organic pasta. Grzegorz Dabrowski produces rye and red beans for the plant. The rye from the Plachta's, Szeliga's and Szypczyński's farms is also sold to the plant for pasta production.

There is a growing consumer interest in organic food. Many people are concerned about their health and realise that organic products are better for them. The production from this pasta processing plant is too small to meet the demand from a growing number of consumers. New investments are necessary and more organic farms to deliver organic products. The site for the new processing plant has been purchased and the installation of equipment started this year. Additional farmers have received training and are in the process of converting to organic production. A new phase in organic food production and distribution has started.

Discussion

Obstacles

The farmers participating in these initiatives face different problems. Some of them they can solve themselves but most are beyond their control. The most important constraints include:

- the small size of the farms
- a poor local retailing system
- limited possibilities for food processing
- lack of financial capital
- poor advisory services for organic farmers (especially in Kluczbork)
- low consumer awareness on environmental issues
- new standards for organic products as a result of joining EU

The most important obstacle for developing local organic food systems seems to be the low society awareness about environmental issues. Compared to of the situation in Nordic countries Poland has a long way to go. This is partly because such changes require educating the

society and this takes time. This education started in Poland in the beginning of the 90's. In EU countries, and especially in Nordic countries this process has been going on for many decades. Because of the importance of education, different promotional events that draw attention to these issues are very important.

Polish farmers are also facing financial problems. Local economies are weak and vulnerable. Unemployment is high and farms in rural areas are being abandoned. For this reason these initiatives are important, not only because they are environmentally justified, but also because they can play a very important role economically. Development of a local organic food system can provide the basis for economic survival in rural areas.

Beras planned actions

These initiatives will continue to develop. We expect that additional partners: farmers, NGO's, retailers, shopkeepers, advisory centres, etc. will join and support these efforts. In the short run we will concentrate on organising the following activities:

- promotional events
- completion of the bicycle path (extending the path, making signs) in Kluczbork municipality and developing other farmer-retailer-consumer connections
- training for farmers in organic food production
- meetings with local stakeholders (i.e. meetings with local governments, processors and local organisations)

Conclusion

The organic production and processing activities described above have been initiated by grassroots organisations and farmers themselves. They have been started without any outside support but due to the BERAS project their development can be much faster.

Such local initiatives are nothing new in Poland. Though rural societies are traditionally closed people are quite active. The new ideas that were born with these initiatives concern the connection of key groups – farmers, retailers and consumers – as well as the primacy of environmental concerns.

The important lessons to be learnt from these initiatives is not only the need for co-operation between the different actors but also the need of a determined driving force. Without the essential work of Iwona and Janusz Śliczni and Aleksandra and Mieczyslaw Babalscy the development of these initiatives would not have been possible.

Another important conclusion from these cases concerns the importance of consumer awareness. Without raising their awareness on environmental issues the further development of movements such as these in Kluczbork or Zbiczno will not be possible and their impact limited.

RASEINIAI, LITHUANIA – Building on diversity, innovation and collaboration

Vida-Marija Rutkovienė & Anzelika Raškauskienė

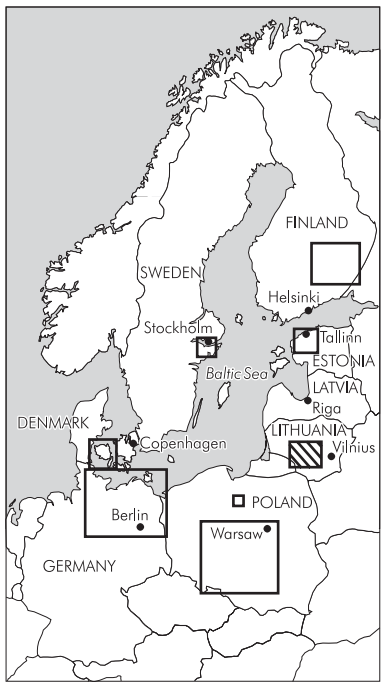
Short introduction to Lithuania and the project

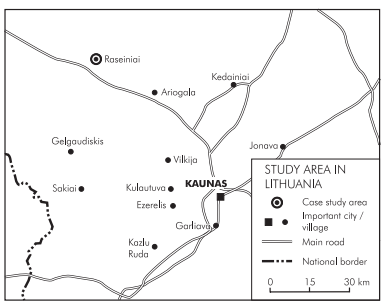
The country of Lithuania is about 65 300 km² and has a population of around three and a half million people. Of these 82% are Lithuanians, 8 % Russians, 7 % Polish, and 3 % are of other descent. Thirty percent of Lithuanian's population lives in the rural areas, 16 percent are employed there.

Lithuania has 816 rivers that are longer than 10 km. The largest river, Nemunas, is 937 km, half of which is in Lithuanian territory. It also has 2 834 lakes larger than 0.5 ha. The largest is Druksiai with its 42 km².

The average winter temperature is -4.9°C, the average summer temperature +17.0°C and the average annual precipitation is 748 mm.

Lithuanian is now transforming its agriculture to private forms of ownership. It differs considerably from agriculture in other EU countries. For example, in Lithuania agriculture plays an important economic, social and ethno-cultural role. More than half of the territory is classified as agricultural land. Soil fertility is satisfactory and provides a good basis for the development of crop and animal husbandry. There are many environmental issues in need of urgent attention. Organic agriculture has very good prospects, especially considering that the average size of farms is 15 ha and that there is a growing market for organic products.





The project in Lithuania

The project aims to reach persons both at the University of Agriculture and the initiators of Raseiniai organic agriculture to deepen their knowledge about organic agriculture.

The project builds on the premise that organic agriculture in the rural area of Kaunas county enhances landscape diversity, protects the rural environment, strengthens local economies and provides employment. It will document practical case studies, primarily in Kaunas county, Raseiniai district, and complement these with information from selected farms, where practical initiatives have been taken to bring about lifestyle changes throughout the whole food system. This includes primary agricultural production, processing, distribution, storage and consumption. These cases will provide examples of ecological production, processing, recycling and the minimisation in the use of transport systems that contribute to the greenhouse effect. By encouraging exchanges of experience, learning and cooperation among those involved, and through exchange and dissemination of experience gained in the other countries of the Baltic Sea region (Sweden, Denmark, Fin-

land, Poland, Germany and Estonia), the project will enhance the knowledge, expertise and motivation of everyone concerned and improve the prospects of achieving environmental policy goals and establishing sustainable local food production and consumption systems in Raseiniai district.

The data presented in this case is from the public certification body Ekoagros' statistical information, as well as the Statistical Yearbook of Lithuania, 2003 and interviews with the Raseiniai municipality farmers and other community members.

Raseiniai municipality

The lands of the Kaunas County are renowned throughout the country. It is not just because of the fertile soil, the inventive farmers, the bright industrialists and the gifted tradesmen. Such qualities are found throughout the whole of Lithuania. What the residents of Kaunas and Samogitians can be especially proud of is their patriotism during all the wars and invasions that have plagued this country. No invader has found peace here. This desire for freedom and the facility to use it, the dignity, the keeping of national interests, the wish to communicate and co-operate with representatives of other nations who are well disposed towards our country – these are the most characteristic features of the people of our county.

The industrial sector of the county is developed and includes mechanical engineering, manufacturing, metal working, chemical, building materials, textile and knitwear, paper and printing, furniture, glass and food industries. There are many natural and cultural values of interest to tourists. The infrastructure to serve them is being rapidly developed. Cultural life is vibrant. Some of the significant events include the Pazaislis musical festival, the international festival of young musicians, and jazz festivals.

The infrastructure in the county including highways, railroads, and airway linking Lithuania with neighbouring countries is convenient. The region is served by the Kaunas-Klaipeda highway and Siauliai-Sovetskas (Tilze) railway.

Kaunas county is the largest of Lithuania's 10 counties and covers 12.4 % of the territory (806 000 ha). There are approximately 703 000 inhabitants (20 % of the total population in the country) of which 46 % are male and 54 % female. (Population census of 2001) Population density is 86 per km^2.

Raseiniai – the ancient capital of Lowland (Zemaitija), the place of Lowlanders Land and Castle court – has a long history. It was awarded Magderburg rights (the right to self-rule) in 1792. During the thirteenth and fourteenth centuries it was known as *Rascyne, Roschigen, and Rusene*.

Many renowned Lithuanian writers, poets and scientists were born in this region. The famous Lithuanian bard Maironis lived here in his childhood. The poets have written about the "beautiful valleys of swift Dubysa, and hills clothed in rue green". The county is also famous for

Siluva Church festivals and St. Virgin Mary basilica and chapel. On September 7 1993 Siluva was honoured by a visit from Pope John Paul II. The rich natural and cultural heritage can provide a basis for developing tourism.

Raseiniai, in the far west, is one of seven municipalities in Kaunas county. The total area of Raseiniai is 157 000 hectares: 63 % is agricultural land, 21 % – town and residential areas and 2 % - industry, roads, etc. The total population of Raseiniai area is 43 700 inhabitants of which 47 % are male and 53 % female. (Population census of 2001) Regional facilities include 12 sub-district centres, a school of agriculture and 157 agricultural enterprises.

Organic agriculture

The development of organic agriculture in Lithuanian started in 1993 when 9 farms totalling 143 ha were certified. The average size of the farm was 15.8 ha. Ten years later in 2003 there were 700 organic farms covering almost 24 000 hectares. This means the average size is app 34 ha. The national certification body "Ekoagros" was established in 1997 and in 2000 it received accreditation from IFOAM (the International Federation of Organic Agriculture Movements).

The number of organic farms has been increasing rapidly in Raseiniai district in recent years. In 2003 it had the fifth largest number of organic farms in Lithuania and seventh if the farms in conversion are also included.

There are 974 hectares of certified organic land and 28 farms in the Raseiniai municipality at the moment (Figure 2). Their average size is approximately 34 ha. This includes about 135 ha of fishponds.

Most of these are in their first year of the conversion to organic agriculture (Figure 3). This means that land classified as organic will peak in 2005.

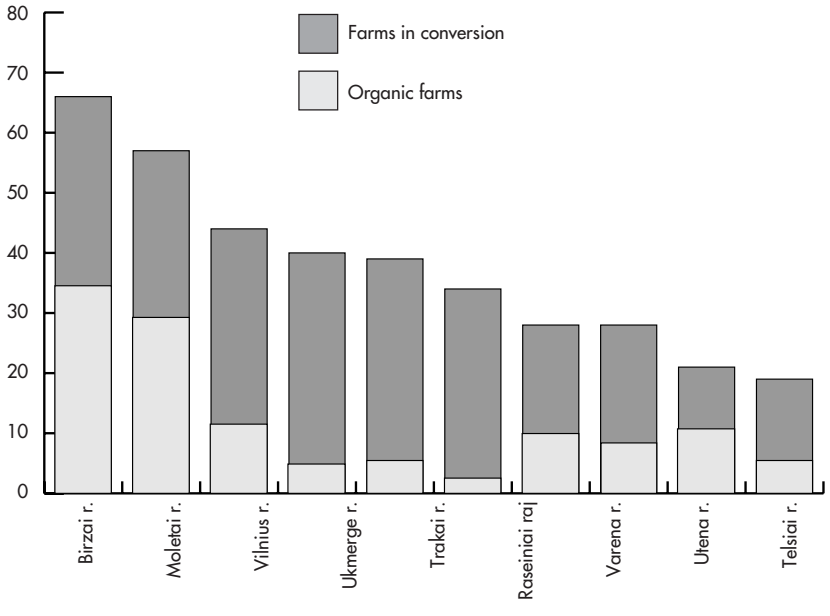


Figure 1. Organic agriculture in the top 10 municipalities in Lithuania (2003).

The average organic farm is 35 ha – the smallest is 1 ha and the largest 138 ha. Almost half of this land (46 percent) was used for green forage in 2003 (Figure 4). There were 253 certified animals supplying on average 100 kg nitrogen to the fields.

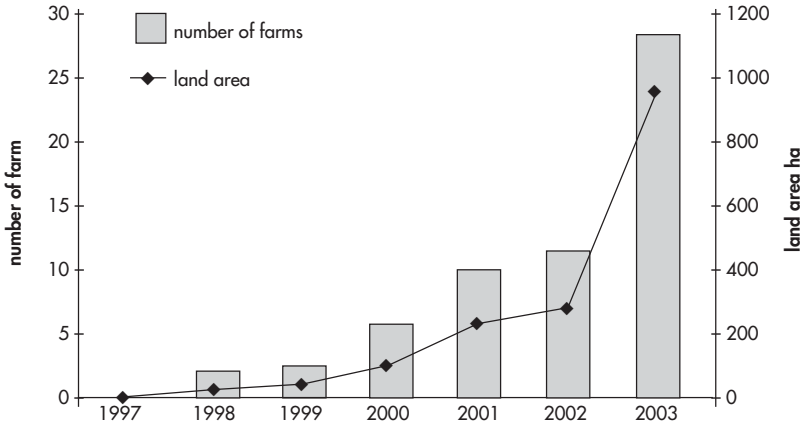


Figure 2. Number of farms and hectares in Raseiniai municipality certified, or in the process of becoming certified, organic.

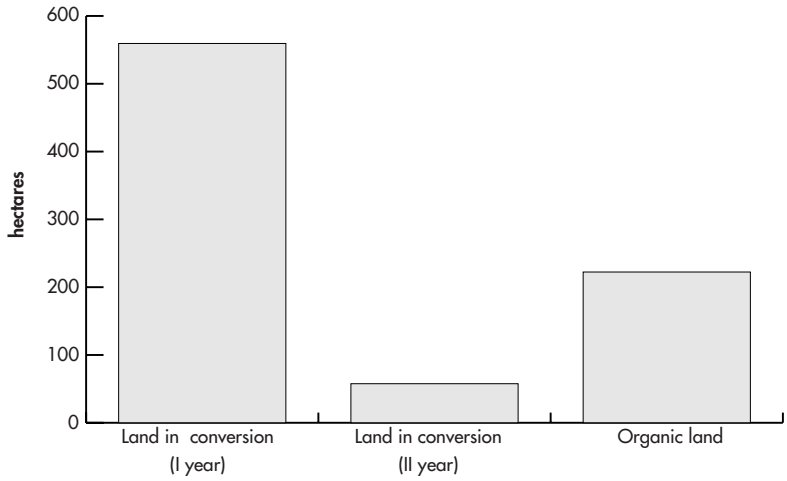


Figure 3. Organic land in Raseiniai by stage of conversion.

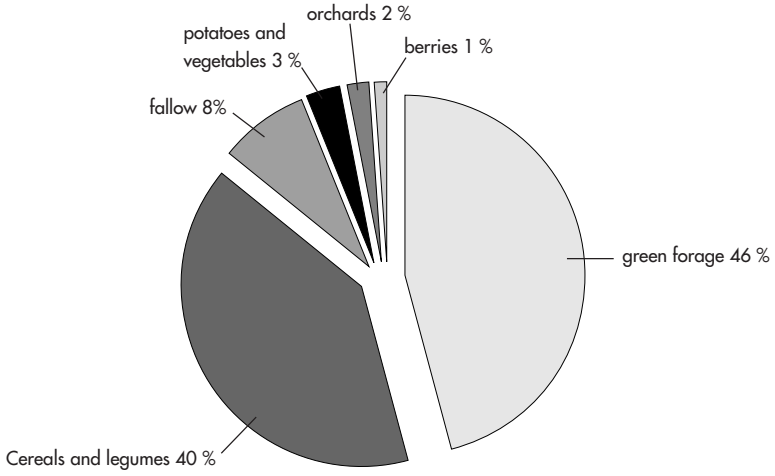


Figure 4.Use of certified land in Raseiniai municipality in 2003.

Description of some farms in Raseiniai region district

The farms were selected so they represent the diversity of the agricultural activities in Raseiniai region.

The farms:

Owners	Description of the farm
Marijus Čekavičius	This farm in Ramonai was certified in 1998. It is 18.65 ha. They grow crops including vegetables. Rare species and varieties are predominant on the farm. These include: amaranthus, spelt *(Triticum spelta)*, black radish and different kinds of medicinal herbs. Family members are employed in the farm. The farm products are sold at fairs and in the shop in Raseiniai, the department of organic products.
Bernadeta – Elena Žagarnauskienė	Biliunai Estate in Girkalnis was established in 1410. This estate was a gift to the nobleman Belevicius from the Magnus Duke Vytautas. There are two such estates in Europe. The farm was certified in 2000. It is 108 ha. of mixed farming. They produce and sell fruit: apples, pears, plumbs, cherries, gooseberries and red currants. The orchard is planted according to the Little Dipper (Bear). They do small scale processing on the farm: drying of the medicinal herbs. They also have animals (cows) as well as well as crop production (barley, oats, potatoes etc.) for consumption and sale.
Antanas Pratašius	This farm in Paežeriai was certified in 2000. It is 53 ha. They are one of the pioneers in organic beef production and have the ambition to establish a pedigree beef cattle herd.
Vytautas Adomas Šikšnys	This farm lies in the village of "Florencija" and was certified in 2000. It is 23 ha. They are rebuilding this farm that has been in his family for many generations. The nature of the farm matches the name of the settlement – Florencija .
"Raseinių žuvininkystė"	This fish farm has ponds in Palovaiciai and Keidziai. These were certified in 2003. The size of the ponds 135 ha.

The new initiatives

Co-operative "Ekokrăstas"

This producer cooperative was established in September 2002 by 8 founding members. Together they produce a wide variety of processed cereals products. The cooperative delivers organic products as ordered by consumers to their homes in Kaunas. They also sell organic products in Kaunas county at several market places: eg Girstupis bazaar, Daukanto street in Kaunas, Basanavičius street in Vilnius; and shops: eg "Sveikata" in Šiauliai, "Sveikas maistas "in Kaunas and Skalsa" in Raseiniai. Part of the profit from these sales is invested in consumer education. Articles about organic products have been included in the

local newspapers and information broadcasted on the local (Kaunas) television. In addition they have organised annual fairs for the sale of organic products in Raseiniai municipality and field days on organic farms. Co-operative members also arrange 2–3 seminars per year on the growing and processing of organic products.

Mill "Žemynos malūnas"
This mill was certified in 2002. It processes organic cereals to flour and oatmeal. Flakes and pasta will be added to the assortment of the mill in the future. The organic products processed at the mill come from all over the country.

E-market
The most immediate task for organic agriculture enthusiast and farmer Marijus Čekavičius is the initiation of an organic products e-market in Kaunas county.

Discussion

The development of organic agriculture in Raseiniai municipality is an example of complex regional development that includes all aspects of the food system from production in the field to the table of consumers. It requires simultaneous development of the producing, processing and marketing aspects. The initiatives of the farmers to use new market forms for their organic products are especially noteworthy. This has included delivery of consumers' orders to their homes, e marketing and consumer education.

Due to the nature of food systems and the challenges that this project is working with, changes will take time. We cannot expect to get results immediately. Changes are needed in the attitude of the consumers towards organic products as well as acceptance of the need for people in rural areas – producers, consumers and processors - to co-operate.

Success in implementing local ecological consumer-producer cooperation for sustainable rural development will improve the competitiveness and efficiency of local agricultural production, processing and marketing. This will provide a basis for long term, sustainable rural development that will in turn provide further support for organic farming in the countryside. It is this positive spiral of events we hope to support.

The project will be implemented with the help of specialists from the community. A sociologist from the local authority will assist in the preparation of the Questionnaire, local (Raseiniai district) and regional (Kaunas county) authorities will be invited to take part in the seminars and discussions, representatives from the local authority will take part in the study visit to Finland. A web page "E-market of Lithuanian organic products – for each and all" is planned. It will include a database with organic farmers and processors in Raseiniai region. A products

delivery scheme to the consumers will also be drawn up.

Close collaboration of producers and consumers is a key issue in the successful development of organic marketing. The initiative in the Raseiniai case is an observable example that can provide inspiration and experiences for people in other districts with similar ambitions. However the success of any initiative will depend on the people taking part and the initiatives they take. The impact of a local enthusiast on the local organic food system can be decisive.

PAHKLA CAMPHILL VILLAGE, ESTONIA – Increased processing of organic foods: a key to the future

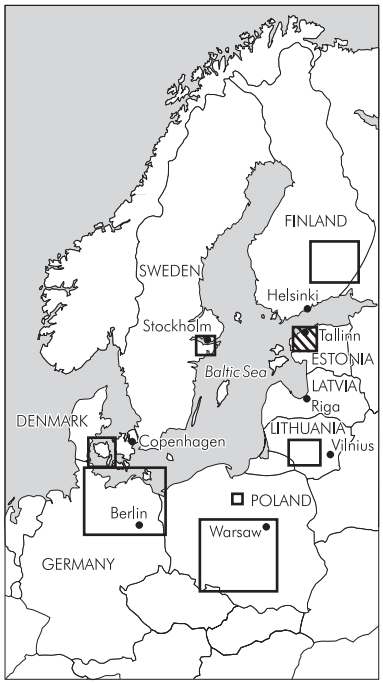
Airi Vetemaa

Introduction

The following information about Pahkla Camphill Village has been gained through discussions in several meetings that the author has had with Village representatives: ex farmer and dairy manager Arvo Purga, the head of the Village Tiit Timmermann and housemother Pille Timmermann.

Pahkla Camphill Village is situated in Kohila Community in Rapla County in the northern part of Estonia. The capital city Tallinn is just 30 km away and Rapla, the county centre just 25 km.

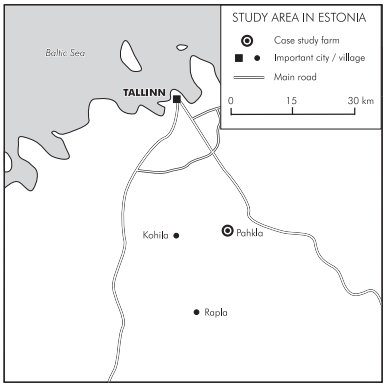
Pahkla lies in Gulf of Finland drainage area.



Kohila Community has a total population of 6198 (as of 1st January 2004) living on 230 km^2. This includes 6800 ha arable land, 1250 ha natural grassland and 10130 ha forest. There are 20 villages and 3 small towns: the municipal center Kohila with 3505 inhabitants, Hageri and Prillimäe.

In 2003 there were 4 organic farms, including. Pahkla Camphill Village, in Kohila Community with a total of 150 ha under organic production. In Rapla County as a whole there are 54 organic farms with 2990 ha under organic production. This is about average for Estonia and so in this regard Kohila Community is representative of the country as a whole.

Up to now there has been little or no cooperation among the organic farmers in this Community.



Pahkla Camphill Village

Pahkla Camphill Village was established in 1992. It is a life-sharing community for adults who have special needs. The work of Camphill draws its inspiration and deepest content from the anthroposophical insights of Rudolf Steiner. The basic principle is the recognition of the dignity of people with mental disabilities.

There are 30 people living in the Pahkla Camphill Village. 17 are permanent disabled residents, the others are family members, co-workers and volunteers who are taking care of and providing guidance to them. All inhabitants live, learn and work here together in a family-like settings and everyone can contribute to the life of the community according to his or her ability to do so. An important part of Pahkla Camphill Village is the farm and dairy. Here the disabled people can develop their skills and find meaningful tasks to perform. In addition

to work and educational programs there is a varied cultural and social life in the Village community.

The farm has been operating organically since its beginning in 1992. From 2000 it has received the organic farming acreage subsidy. The farm produces fodder (grass and cereals) for its own cows, pigs and hens as well as potatoes, vegetables, berries and fruit.

In 2003 the Village was managing 66 ha of agricultural land, 58 ha was organic and 8 ha was in the process of being converted. 23 ha were under fodder cereals (triticale, oats, barley for their own consumption), 0.6 ha under vegetables and the rest was grassland.

As the fertile layer of soil above the limestone is generally very stony and thin, drought is a common occurrence. The result is low yields of both cereals and grass.

The farm keeps 30 head of the endangered local breed, the Estonian Native Cow. Of these 13 are milk cows. They also have a few pigs and laying hens. Fodder is normally produced on the farm and only minerals are purchased from outside. However, in the years of severe draught it has been necessary to purchase some additional fodder. The Village is planning to enlarge the pasture area to guarantee self-sufficiency even in dry years.

The 13 milking cows produce 47 tons of milk per year, which is more than the Village needs. Therefore they have a small dairy where hard and soft cheese and yogurt is produced. However due to the high hygiene requirements of the Estonian Food Act for food processing facilities and the lack of financial resources to make the required improvements the Village may not officially sell these processed dairy products.

The Village farm provides a significant part of the food needs of its inhabitants. They are self sufficient with respect to several food groups – e.g. milk products, potatoes, vegetables, fruits, and berries. Also animal fodder is produced on-farm. For this reason the farm can be taken as a model for small-scale local recycling agriculture.

The farm provides the Village inhabitants not only food for their own consumption but also income, which helps to cover living expenses. The potential for increasing the income is great if processed organic foods can also be sold. Presently they are only legally allowed to sell unprocessed organic food (e.g. raw milk, potatoes, vegetables). During several years of direct selling the Village has gained good experience and a range of loyal customers.

Project activities/future possibilities

In cooperation with the BERAS project and the Estonian Phare co-financed project, some financial and technical support is being provided to Pahkla Camphill Village. One part of the Phare project is the renovation of the dairy (including the purchase of new equipment) to bring it up to the necessary hygienic standards so that it can receive approval for processing from the Veterinary and Food Board. This renovation

improves the prospects for selling organic dairy products and receiving a better income for the Village. The potential market includes the neighbouring villages, the community centre Kohila, the county centre Rapla and also the capital city Tallinn.

This Pahkla Camphill Village experience will be a useful example for other farmers and small-scale processors who are interested in processing of organic milk products. There are plans to present these experiences in training seminars.

In the Community centre Kohila there is also a good possibility to start an organic bakery. The owners of the bakery have shown interest in organic processing if the supply of organic raw material (e.g. flour, sugar) and the marketing channels are available. Pahkla's experiences with marketing of organic products will influence this bakery and whether it decides to launch organic processing.

Conclusion

Organic farming has increased in Estonia during the past few years. By 2003 there were 784 organic producers with 43 000 ha of organically managed land. This is 4 % of the total. Despite this production increase, the processing of organic products is still lagging behind. For several years there has been only one organic milk processor and it is small-scale and only processing milk from its own farm. All other organic milk farmers are forced to sell their milk as conventional. The situation in other sectors is not much better. The result is that only unprocessed organic products are available to consumers for purchase.

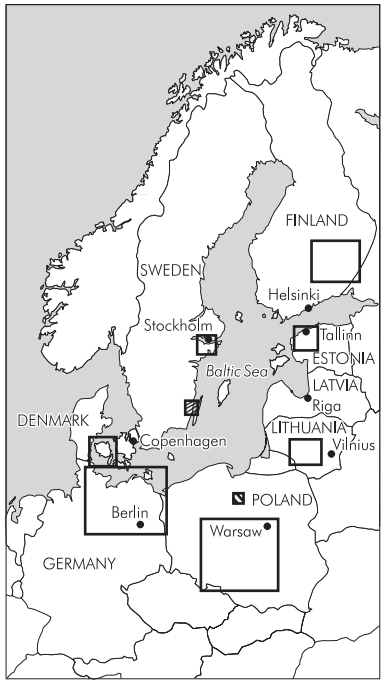
For this reason, this initiative and the efforts of Pahkla Camphill Village to increase the availability of processed organic food, though small, has great value. The processing of local organic products needs to be promoted in Estonia. Otherwise the growing interest in and demand for organic products can result in imported products being sold to consumers. It is this development we want to prevent.

SOLMARKA, SWEDEN – more than the farm, bakery, shop and day-care centre

Ann-Christine Eriksson & Anna Ellström

Introduction

Solmarka farm is situated in the west of Möreslätten 20 km south of Kalmar. For many, Solmarka is much more than just a farm. There is so much more that surrounds it – ideas, visions, thoughts and ideals. Much has happened on and around Solmarka during the approximately 20 years that it has been managed as a biodynamic farm. Here we will try to give a short description of the present situation. We have made four interviews with key informants at Solmarka. We began with Hugo Johansson, one of the initiators of this biodynamic farm. This interview provided a background to the information from the others who included Ruth Doppstadt and her husband Botulf Bernhard, the present farm managers as well as Ann-Marie Hultberg and Marcel Kortekaas co owners and workers at the bakery.



Background

Hugo Johansson grew up in Solmarka. His parents owned Arbyholm farm where they produced pigs, sugar beets and potatoes with conventional farming methods. Hugo who has always been very engaged in environmental issues, wanted to change the farm management in many ways. Together with some friends, Hugo began to grow biodynamically on a small scale in the mid 1970´s.

In 1982 Hugo bought the farm from his father and immediately began to practice biodynamic agriculture. Together with friends he established Arby Trust which eventually officially became the owner of the farm in 1986. In 1982 they also formed Solmarka organization that leased the farm from Arby Trust. At this time it was run by 3 full time employees who were responsible for the field crop production, the vegetable production and the milk cows.

The conditions for the lease were that the farm should grow biodynamically and have a collective management structure. The whole endeavor was built on very idealistic efforts. In addition to Solmarka organization running the farm, another organization, Quercus, was formed to run the bakery in the old pig stable. The employees worked collectively and assumed joint responsibility.

In 1997 the non-profit organizational form was abandoned in favor of a normal lease agreement. Ruth Doppstadt and Botulf Bernhard, who had been working on the farm since 1986, bought the machinery and animals from Solmarka organization and leased the farm from Arby Trust.

Hugo also leases the premises for teaching, which he does in a

private firm called Quercus. Hugo works half time at the Waldorf school as a teacher and students come out to Solmarka for chemistry class in Hugo´s laboratory. In recent years, Hugo has also on occasion worked abroad training apprentices of a large forestry company in environmental issues.

Hugo together with Marcel Kortkass (the baker) and Christian Schiebe (the former gardener) sit on the Arby Trust´s Board of Directors. The Trust is responsible for the maintenance of the farm, which as Hugo himself admits has been neglected the last few years. However renovations are now planned.

Much non-profit work has been invested in Solmarka and the Arby Trust has good solvency. Solmarka has meant a lot, and means a lot for the whole district. In all about 80 jobs have been created at the Waldorf school, the bakery, the day nursery, the treatment home and the shop. Many young families with children have moved in. Hugo remembers how it was in the 60´s, when many houses stood empty. For Hugo rural development is what is important and here Solmarka has actively contributed to turn things in a positive direction.

Solmarka farm

Today the farm is run by Ruth Doppstadt and Botulf Bernhard. In addition to the original farm that they lease from Arby Trust they have purchased a new farm in Halltorp (approx. 10 km away). All in all, the farm has about 80 ha arable land, 56 ha forest and 7 ha permanent pasture. The lease agreement with the Arby Foundation stipulates that the farm shall be run biodynamically, and must be open for collaboration with other activities in the surroundings. Apart from this, Ruth and Botulf have free hands to run the farm in the way they want, although both have regular contact with the board.

Ruth and Botulf employ two people full-time year-round – one working mainly with vegetable production and the other with the milk cows. In addition two people are employed for harvest work for three months in the summer. They also have farm apprentices from many different countries in Europe – usually two during the winter and six during the summer. They come because they are interested in supporting and learning more about biodynamic farming and Solmarka is well known for such possibilities.

Ruth is the person we met at the farm and her goal with the work is to run a biodynamic farm that can survive under market conditions. She wants the farm to be sustainable in the long term and considers diversity an important factor in achieving this. Their aspiration is to increase the local sales and contact with the general public. They want the farm to be an open hospitable place that people want to visit, and where they can become more conscious about how production works. Milk and vegetables are the farm's main production. They have about 30 milk cows and have up until now raised all the young animals themselves. From this year (2004) a small portion of the bull calves will

be sold. On 30 ha of their arable land they have the following six-year crop rotation:
Pasture 1
Pasture 2
Pasture 3
Fall grain – (mostly rye wheat) + vegetables (cabbage and onions)
Vegetables (potatoes, carrots, etc.)
Oats/barley + peas with sown pasture

On some fields near the farm centre they have a special vegetable crop rotation, for vegetables such as maize, beans, cauliflower, lettuce etc. Their newly constructed greenhouses give them an additional 800 m^2 and they can now raise all their own vegetable seedlings. They are also growing spelt for the first time and will sell their harvest to Saltå Kvarn in Järna.

All pasture and pea production goes to feed their own animals, as does most of their grain. With the increase in their vegetable production a few years ago, their own fodder production was insufficient and they have had to purchase some fodder. They hope they will not have to in the future, now that they have gone back to 3 year pasture rotation and in addition have acquired more cropland. Apart from this, they buy only mineral supplements and molasses for the cows. For the new fields that are far from the farm, they have purchased some chicken manure. These fields are presently under quarantine and the spring wheat that is there now will be followed by pasture.

They have no plans to further increase the size of the farm in the future. Rather Ruth believes that they need to concentrate on becoming more capable and effective at what they do. Marketing of their products is a big challenge. About 50 % of their vegetables are presently sold to shops in Kalmar, the rest to Stockholm where there is a bigger demand and higher price. They sell their milk to Arla, a major dairy, as organic, but not biodynamic.

Solmarka Bakery AB

Solmarka Bakery AB is the official name since 1996, when the joint-stock company was formed. In ordinary speech and in a marketing context it is called Solmarka farm bakery. The bakery has existed since the 1980's. Today there are two co-workers/owners: Ann-Marie Hultberg and Marcel Kortekaas. They have employed one additional baker. They produce a selection of biodynamic breads.

All flour and grain is now purchased from the biodynamic mill, Saltå Kvarn, in Järna. Solmarka has no capacity to store and dry their own grain but the bakery does mill its own flour, except the sifted wheat and rye flour which they buy "ready". They purchase about 60 tons of flour per year. They bake both soft bread and gourmet crisp thin bread. The latter represents about 70–80 % of the sales and it is also the sales of this crisp bread that is increasing most. It is sold throughout the coun-

try, via wholesalers, for example Arvid Nordqvist, BP (Biodynamiska Produkter) and Biofood. They also sell directly to shops and restaurants in the area.

How much is sold locally? About 50 % of sales are within the Småland and Öland region. Anne-Marie delivers bread to the shops that are not too far away, and to a certain degree she can co-drive the farm's delivery of fresh vegetables in the summer. The farm store sells about 100 loaves per week. Anne-Marie is also out selling at markets and, especially around Christmas time, they can hardly manage to bake enough crisp bread to keep up with the demand. For this reason, they have invested in a new crisp bread machine that was installed recently. Presently they are developing their rusks – they will be better tasting and have more attractive packaging.

Farm shop

Responsibility for running of the shop is shared by the farm and the bakery. There was a real jump in sales a few years ago when the new shop building was opened and turn over continues to increase. It is now about 5000 to 6000 SEK/week. They sell products from Biofood and BP. In the summer and fall the farm sells all its fresh produce in the shops' refrigerated counter.

Initially the shop was unmanned, open all day and customers tended themselves. They now restrict the open hours to afternoons 14:00 – 18:00 and Saturdays 10:00 – 13:00 when they have an attendant there. This was necessary because the profits became smaller than they should have been, due to losses when the shop was unmanned. They don't advertise much but customers are faithful. Many come from long distances and buy in large quantities. On occasion busses arrive with people on study visits. For this reason they have different plans to further develop the shop, perhaps by adding a café, a dance floor or a flower greenhouse.

Day-care centre – "Lunden" (The Grove)

The Grove is a parent-cooperative day-care centre that began in 1990 on the initiative of parents in the region who did not want to put their children in the municipal daycare facilities. Gunila Pritzel, who had worked as a day mother up until this time, was employed to take care of the children. The day-care centre is located in a small building right next to the Solmarka farmhouse and is rented from the Arby Trust. Today Lunden has 16 children in day-care plus an additional 6 school children after school. Three people are employed full time, a cook works there half time and an assistant is there 80 %. They will not let the number of children get larger than it is. The children are admitted through the local government admission lists and parents pay their fees to them as well.

The school is run according to the Waldorf pedagogy and Ruth believes that the parents who choose this day-care are most attracted

by the beautiful environment and the small group size. They follow the rhythm of the weeks and seasons and organise their activities around days of the week and times of the year. An important aspect is that the children can learn where their food comes from, through the close proximity to the farm, harvesting vegetables and working with food preparation. Through such activities and by avoiding ready-made toys the imagination of the children is stimulated. The children play and their creativity runs free. They are not in structured learning situations all the time.

The children's parents set aside 40 hours per school term to help clean, care for the school garden and to fill-in as substitutes. This corresponds to the work of one person working half time and makes the day-care tuition less expensive.

DISCUSSION – Cooperation in local organic food systems

Laura Seppänen

Chapters 3–9 not only describe different cases, the authors look at them from different perspectives as well. Therefore any comparison in a strict sense of the word is hardly possible. Rather, the heterogeneity of the cases and the varied perspectives with which they have been documented are there to be enjoyed. Although different, they still illustrate some commonalities that well suit the purpose of giving ideas or questions for further studies and actions. Below, the topic of what is needed for local food systems to emerge is discussed and this is related to concrete ideas about ways of enhancing cooperation. These interesting examples are picked up from the local and organic food chains and systems of the cases around the Baltic Sea. At the end some issues for further studies in the field of local producer-consumer cooperation are raised.

What is needed for local food systems to emerge? First, *time*. It is most likely that the processes towards local food systems are slow. Juva in Finland has a history in organic agriculture for more than 20 years, and what is seen in Järna is a result of more than 40 years of work. A project of three years can do something of course, but it is a relatively short period of time. Sometimes initiatives or activities done today may yield positive outcome only after years to come. So we need to be patient!

Second, *active people* are needed. None of the cases involved in BERAS would have been possible without local people who worked to create marketing channels for local and organic products. In Kluczbork and Zbiczno municipalities in Poland active farmer couples, Janusz and Iwona Śliczni, and Mieczyslaw and Aleksandra Babalscy have been important driving forces for the local and organic initiatives. In Solmarka, Sweden, Hugo Johansson was the person to change the management of the farm into biodynamic production. Above all, these cases tell about the *necessity and importance of cooperation* and connection between different actors such as farmers, retailers and consumers.

In order to be sustainable local and ecological food chains need to be, at least to some extent, *economically profitable*. Local and organic food is mostly based on relatively small rural enterprises. The question of a suitable scale or the amount of production and processing is often discussed with local and organic food. There needs to be enough demand and customers, and therefore big cities or other sites of consumption nearby may help build local food systems. This is seen in Järna where the local actors recognize Stockholm and its farmers' markets as useful for the marketing, and in Bioranch Zempow where the most demand for organic beef exists in Berlin. The box scheme as presented in Nørregaard, Denmark, allows deliveries to outside the local area. By

increasing the scale it is possible, to some extent, to lower the price, which often is a barrier for buying local and organic for municipal kitchens or consumers. The increase in scale emphasizes the need for cooperation among producers.

There are many other factors affecting the functioning of local and organic food systems. The natural resources enable what can be done and also set limits. For instance clay soils make it difficult to produce root crops and vegetables on a large scale. Laws and regulations also affect food systems. Often food processing regulations are made with big companies in mind. As a result they often present obstacles to small-scale food processing. For small enterprises, the fulfilling of these requirements may entail economic and work time resources that are not available. For the marketing of dairy products in Pahkla Camphill Village, Estonia, new expensive processing facilities are needed to fulfil the hygiene regulations. One of the aims in BERAS project is to reveal these and other types of obstacles, and inform and discuss with administrative officials the possibilities to further develop the regulations and administrative practices.

Despite these factors there is a lot that can be done and cooperation between producers, shopkeepers, advisors and many others is central. Cooperation is probably the only way the transformation to local organic food systems can take place. How significant the transformation is depends on the historically-rooted circumstances in each case. Environmental concerns such as in Bioranch Zempow, Germany, or desires to strengthen local identities and innovation, questions of rural entrepreneurship and development, or many other purposes can fuel meetings, face-to-face interactions and other forms of communication between farmers, processors, consumers and others. In cooperation different actors recognize and regard each other as important and useful resources. The formation of a local organic food system requires that people find *new purposes and objects* (Engeström et al. 2003) for their activities: this means that both individuals and collective groups find new answers to the questions for whom and why food is produced, processed and delivered, and what the consequences of production and consumption are. The common consciousness in the food system of Järna, Sweden, most likely manifests such a collective object.

Cooperation and interaction is indispensable in developing new purposes and practices for food systems. It is the heterogeneity of the actors such as farmers, processors, consumers and others that enables the possibility to mutually benefit each other. With cooperation new relations are formed which strengthen and modify further the building of the food systems.

Shared spaces or instruments, or "boundary objects" (Star 1989), which help various actors, are needed for collaborative food systems. Devices in logistics, timetables for deliveries, agreements, letters mediating information from farmers to customers as in Nørregaard, Denmark, or experimental kitchens where new products can be developed, as in

Juva, Finland, are examples of such instruments. It is useful to enhance shared instruments and spaces for the formation and maintenance of food chains and systems.

The relations of cooperation within local food systems may have a special character. Offer (1997) uses the notion of "economy of *regard*" when referring to the transfer of goods without the benefit of markets or prices. It means that the preference for reciprocal exchange "arises from the intrinsic benefits of social and personal interaction, from the satisfactions of regard…[and is]…preferred when trade involves a personal interaction, and when goods and services are unique, expensive, or have many dimensions of quality" (Offer, 1997,p. 450). Organic local food indeed has many qualities, is often unique and more expensive than the conventional mass products. Regard may take many forms such as acknowledgement, respect, status, power and friendship. In the context of local food chains the notion of regard would imply that cooperation is not only an instrumental means for building or maintaining flows of food: cooperation as creation of relations of regard is also an aim in itself. They in turn can contribute to local identities and well-being. Relations of regard are likely to have special importance in local and organic food chains where regard may partly compensate the higher price and bigger work load as compared to more industrialized food chains.

Colin Sage (2003) sees personal acknowledgement and relations of regard underpinning the existence of the organic food network in south-west Ireland. Relations of regard may be involved in the inspiring planned cooperation between Bakkedalen farm and the local baker, Denmark, in collaborative planning of the bicycle route in Kluczbork, Poland, or in the contacts and direct sales between the Puumala day care centre kitchen and local organic producers in the Juva case in Finland. Besides common purposes and objects, relations of regard may fuel the collective action for enhancing ecological agriculture and local food systems.

Cooperation in local ecological food is promoted by *small initiatives and projects*. One starting point in many cases has been one or several organic farmers who somehow have to organize the selling of their products. For instance in Raseiniai, Lithuania, farmers have used new market forms such as e marketing and delivery to homes. A bicycle route in Kluczbork, Poland, meetings and seminars on Nørregaard farm in Denmark are other examples. In Juva, joint product development with a processor, institutional food services and researchers has taken place. Presentations in local shops, market place activities, excursions to other sites, farm-visit cooperation between schools and farms, and promotional events are additional examples of initiatives to enhance cooperation between producers and consumers. Social interaction influences consumer preferences as well as the general awareness about environmental and rural issues. One way to move forward is community supported agriculture (CSA) which is known in the USA (O'Hara and Stagl 2002).

The support group of Bakkedalen farm, Denmark, resembles it.

To conclude I would like to raise some questions for further studies. Based on these case studies the extent of locality of these chains and systems is not known. To what degree do the farms and processing enterprises sell their products locally or to more distant markets? It may even be that selling to wholesalers and centralized markets partly enable enterprises to engage in local food chains (see Sage 2003, 58).

There is not any one right model for all local organic and ecological food systems. Each case has its own history, nature and characteristics and has found its own solutions. It is not so important whether the food system is small or large – rather, it is crucial that the parts of the system fit and function well together. The different types of local food systems, their suitable scales and functioning require further analysis.

In this publication of case descriptions the issue of the researchers' role in studying and promoting cooperation in food systems has only been touched slightly. Is it the role of an activist or of an objective scientist? Should researchers be outsiders or insiders of the food system, or perhaps both? (See Engeström and Miettinen 1999; Alrøe and Kristensen 2002.) Moreover, what are the suitable forms of facilitation and researchers' interaction with practitioners to enhance mutual learning? What are the bases of developmental research? What is the role of rural policy and projects in developing local and ecological food chains? These questions remain to be studied and the findings documented. The BERAS project also aims at enhancing international cooperation between researchers and others interested in local and organic food. The past, present and future initiatives described in this publication hopefully give ideas and inspiration for cooperation within food systems, within multidisciplinary research, and between them.

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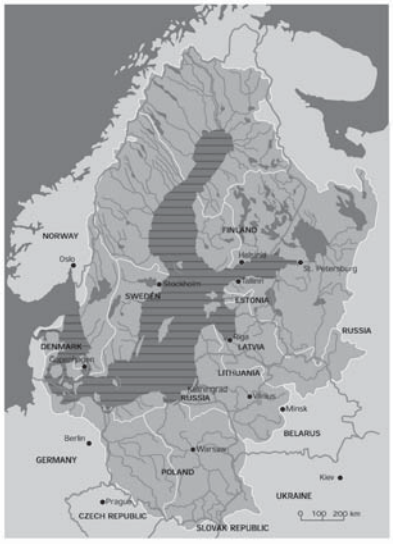

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