

Policy goals, research needs and research regarding organic sector in Finland

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Abstract

The status of organic farming was established in Finland already in 1995 with the entry to EU, but in the Finnish food markets the share of the organic sector has remained modest. As a possible explanation the presentation examines the correspondence of the research needs and actual research dealing with the organic supply-value chain in Finland. The approach is that of policy impact research.

The research needs are inferred from the direct and latent articulations present in the policy discourse. It is captured by examining the goals and their justification in about 20 national policy documents from the past decennium; these deal either specifically with organic sector, with food and nutrition or with sustainable development, or they are more comprehensive and address several topics. The review on the concluded and still on-going research dealing with the organic sector over the past 15 years is based on a meta-study. The main information sources were the research data bases of the two main actors, University of Helsinki and MTT Agrifood Research Finland. This information is complemented with the relevant doctoral theses from all Finnish universities.

Several bottle necks regarding the development of the organic supply chain are identified in the policy documents. These deal both with legislative and informative aspects as well as with various practical hindrances. Preliminary results suggest that either the research design or communication of the research results to the relevant actors so as to open the bottle necks has not been very successful. Today the research is still very much biased towards primary production, and little attention is paid to the societal and policy aspects. The few studies focusing on the consumer attitudes and on the R&D aiming at promoting organic food within the public catering sector are also identified in the policy documents. Other important topics are formation, development and characteristics of the organic value chains and networks, and the prerequisites for their functioning, but research on these topics is modest.

From 2013 on, the research has been coordinated by newly founded Finnish Institute for Organic Food, and the situation is likely to change. The institute stresses the need of science communication, adult education and co-operation with entrepreneurs in research. The transdisciplinary approach involving both the researchers and the practical actors enables designing the research so as to better respond to the needs of the organic sector and to the expectations of the society.

1. Introduction

The aim of the present contribution is to provide an overview on the development of the organic sector and on the status of the organic research in Finland. The basic data have been compiled within the frame of the Core Organic HealthyGrowth project¹ and more extensive report has been published (Risku-Norja, 2013).

¹ <http://www.healthygrowth.eu/>

Here the important policy milestones and the development of organic production and consumption are shortly summarized. The overall goals of Finnish food policy and the implied research needs are captured by referring to the relevant policy documents. The aim is to evaluate the compliance of the policy goals and development of the organic sector, and look for eventual contribution of the research to the development.

In concluding section the implications of the results are discussed by reflecting the impact of the policy measures on research and the development of organic sector.

2. Material and methods

The numeric data are based on the official statistics (EVIRA, 2012; Pro Organic, 2013; MMM, annual issues). The role of the government and the national goals and strategies were captured by analyzing 17 relevant national policy documents² from the past decennium; these deal either specifically with organic sector, with food and nutrition or with sustainable development, or they are more comprehensive and address several topics.

The review on the research dealing with the organic sector was based on a meta-study. The time span was by and large the past 15 years, since only sporadic information on older research was available. The main information sources were the research data bases of the two main actors, University of Helsinki and MTT Agrifood Research Finland. This information was complemented with the relevant doctoral theses from all Finnish universities.

The research needs are inferred from the direct and latent articulations present in the policy discourse. These were captured by using the method of qualitative content analysis of the documents and exploiting qualitative data analysis software as the tool in the analysis. The documents were scrutinized in order to look for the quotations dealing with organic food, its production and consumption. The quotations were identified as dealing with problems, justification, aims, measures, and impacts, and coded accordingly. The quotations were further scrutinized in order to see whether they refer to practical measures aimed at different actor groups, farmers, small and medium-sized enterprises (SME:s), public catering sector and consumers or to the research needs.

Regarding research, the focus was on the completed and on-going projects that deal with either policy, markets and consumers, with specific food items and/or their quality. The relevant material was retrieved by simple search of the research registers using organic, food chain, food supply, actor, as search terms. On the basis of the title, keywords and abstract the theses and research projects were then sorted into 6 categories, primary production, environment, food systems, meta-research, food items and their quality, and society, the last two categories being the relevant ones in this context.

3. Results

3.1 Development of organic sector in Finland

Organic farming in Finland has long, but thin roots sprouting from the idealistic approach of biodynamic cultivation in the beginning of the 19'ies. Professional organic agriculture was

² The following documents were considered:

Government programs: (VN 2007, VN 2011)

Government decision-in principle: (VN 2006b)

Government report to parliament: (VN 2010)

Strategies: (MMM 2002, Organic strategy work group 2006, VN 2006a, Food strategy 2010)

Disquisition: (Country Brand Delegation 2010, Setu 2010, Kurunmäki et al. 2012)

Promotion programs: (Ministry of the Environment 2008, SRE 2008, Ministry of the Environment 2009, Kottila 2011,

Ministry of the Environment 2012, MMM 2013, VN 2013)

established gradually. In the beginning of the 1950'ies there were already around twenty organic farms in Finland, but organic agriculture without necessarily biodynamic emphases started to gain ground in the 1970'ies with emergence of the first commercial organic farms (Hanhilahti et al., 2005).

The Finnish association Bios joined the International Federation of Organic Agricultural Movements (IFOAM) in 1973 and the association compiled the criteria for organic and for biodynamic production. Extension activity was based on the voluntary work of the organic farmers and students. The surveillance was carried out by Bios until the Federation of the Finnish Organic Associations (Luomuliitto) was founded in 1985. The federation accepted the criteria for organic production and started to build a national surveillance organization. The surveillance was taken over by the authorities in 2000 farms (Hanhilahti et al., 2005).

The national treaty on economic subsidies for farmers in transition to organic production was introduced 1990. In 1994 when the regulation of the European Union (ETY N:o 2092/91) on organic production and its surveillance was put into practice, organic production was officially defined in Finland. Finland joined the EU in 1995, and in line with the environmental subsidy scheme the five year agreements to encourage farmers to transfer to organic farming were implemented. In the beginning the transition subsidy was paid only for crop cultivation, but since 2005 also animal production has been subsidised (Hanhilahti et al., 2005).

The expansion was rapid during the 1990'ies: in 1990 the organic cultivation comprised 0.3%. The share increased to about 7% percent by the beginning of the new millennium, and then the goal by the year 2010 for organic production was set to 15% share from the cultivated area (MMM 2002). This goal was not reached. Since then the interest slightly declined, and the share remained at the level of about 6 %. From 2008 on organic production area has started slowly to grow again and at present its share about 9% (MMM, annual issues).

In 1995 the share of organic farms from all farms was 2.8%. Today the number of organic farms is 4322 comprising 6.3% of all farms. The average size of the organic farms is about 46.4 hectares and thus about 15% larger than that of the conventional farms (39 hectares: EVIRA, 2012, Pro Organic, 2013).

An overview of the development of the organic production and consumption is presented in Figure 1.

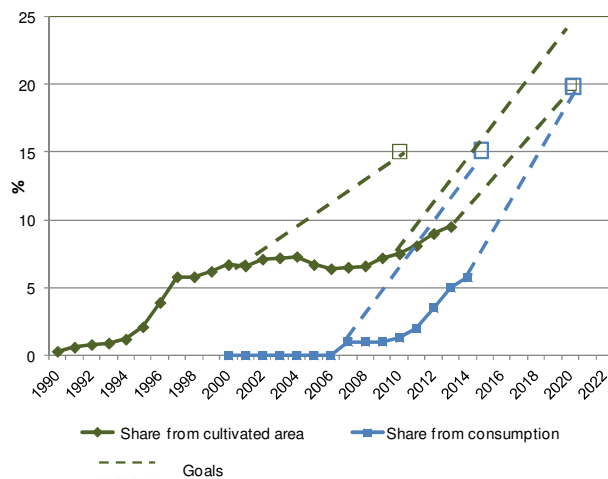


Figure 1. The development of organic production and consumption as percentage from total field area and from total food consumption.

Today there are about 600 enterprises in Finland that manufacture or import organic products (EVIRA, 2012). Over 80% of organic sales (€) comes from the grocery stores selling daily consumer goods. However, compared to the average of food sales, the share of farmers' markets, special stores and direct sells is clearly higher for organic food items (Pro Organic, 2013). Until 2010 the market share (in euros) of organic products from food purchases remained low (of the order 1%: VN, 2013). From 2010 on, the demand for organic products has grown rapidly, and the market share is today about 1.6%.

The largest stores have a choice of about 1500-2000 organic food items, and 60% of them are domestic (Pro Organic, 2013). The most bought single product is organic milk. About one third from organic sales comes from each of the three product groups: liquid dairy products, fruit and vegetables and dry cereal products. The consumers are interested especially in organic meat and would like to have more versatile choice of all products (Pro Organic, 2013).

Compared to many other European countries, the statutory public catering plays an exceptionally important role in the Finnish food sector. It provides over half of all meals eaten outside homes, and the great majority, 83%, is at the response of the municipalities and the state; the rest being staff canteens in charge of the private entrepreneurs (A.C. Nielsen 2008). The volume of the organic food items served within the public catering sector about is about 5% (Pro Organic, 2013). The organic food items used on the daily or weekly basis are milk, grain products and tubers. Seasonal use of organic berries, vegetables and tubers appears, however, to be more common. Organic meat and meat products are seldom used in municipal catering, the high price and problems in availability restricts their use (Muukka et al., 2009).

3.2. Policy goals and identified research needs regarding the organic sector

In the early years starting from 1970 and until the first years of the new millenium in the policy documents the topic of alternative food supplies focused specifically on organic production and products. In the new millenium the local food -concept was brought in to discussion, and at the same time, the sustainability issues started to gain increasing attention also within the food sector. This is also reflected in the policy documents. In the policy discourse local and organic started to appear as parallel concepts, and they were treated more or less synonymously. Based on the same arguments organic and local food were presented as options to support sustainability strivings. Sustainable meal or service was defined as a product of shortest possible supply chain or as an organic product or as a product that has been produced traceably in line with the responsibility principles (Ministry of the Environment, 2009). The recommendation to increase the use local, organic, seasonal or vegetarian food is still justified by sustainability grounds. Only the promotion program for Finnish food culture (SRE, 2008) and the documents of the organic sector itself (Organic Strategy Work Group, 2006; Kottila, 2011) clearly distinguished organic and local as concepts of their own.

The parallel use of the concepts organic and local food has continued until finally in 2012 specific promotion programs for local (Kurunmäki et al., 2012) and for organic food (MMM 2012) were prepared and finalized in 2013 (MMM, 2013; VN, 2013) . The important milestones regarding the policy steering of organic sector are compiled in Table 1.

In the analyzed documents the clearly articulated major policy goals related to the organic sector are 1) consolidation of organic food products in domestic retail and catering sectors as well as in export with the public catering sector as the path breaker (Organic Strategy Work Group, 2006; Ministry of the Environment, 2008; SRE, 2008; Ministry of the Environment, 2009; Kottila, 2011; Ministry of the Environment, 2012), 2) improved sustainability of the food sector (Ministry of the Environment; 2008; SRE, 2008; Ministry of the Environment, 2009; VN, 2009; Ministry of the Environment, 2012), 3) marked expansion of the organic food sector (VN, 2007; SRE, 2008; VN, 2009; VN, 2010; VN, 2011; VN 2013) and 4) increased domesticity in supply and in use of organic products (Food strategy, 2010; VN, 2010; VN, 2013).

To back up the articulated policy goals, strong policy support in form of allocated funding is given to the *Steps to Organic* -training program³. The program was launched in 2002 in order to strengthen the status of organic products and to improve the knowledge on organic products and producers within the professional catering sector.

The aims expressed in the national policy documents have been brought together and concretized in the strategy for developing organic food markets in Finland and in the new promotion program for the organic sector (VN 2013). The aims for 2007-2015 were outlined in a working group which had representatives from ministries, extension organizations, higher education, food industry and retail as well as from organic food associations.

Table 1. Important milestones.

1970'ies	First commercial organic farms
1973	Criteria for organic and biodynamic production
1985	Federation of the Finnish Organic Associations
1990	National treaty on economic subsidies for farmers in transition to organic production
1994	Implementation of the EU regulation on organic production and its surveillance
1995	EU membership
2001	Strategy of sustainable use of renewable natural resources
2002	Steps-to Organic training program
2005	Finlands' national program to promote sustainable consumption and production
2006	Strategic goals 2007- 2015 in developing the Finnish organic market
2009	Program for sustainable public procurement
2008	Promotion program for Finnish food culture
2009	Resolution of the Finnish government on promoting sustainable public procurements
2010	Country Brand Report
2010	National food strategy
2010	Government report to parliament on food policy
2011	Introduction of food policy
2011	Revised strategy for organic sector 2011-2015
2012	Revised program for sustainable consumption and production
2013	Foundation of Organic Research Institute
2013	Development program of the Finnish government for organic food

The basis for the development is customer orientation, efficient collaboration, learning and innovation, and clear profile. R&D of organic sector is encouraged for new innovations and in order to upgrade organic production and to streamline supply and demand (Organic Strategy Work Group, 2006; Kottila, 2011). Attention is paid especially to organic animal husbandry and to public procurements, in which the use of organic products is to be expanded so as to cover all kitchens within the public sector. Improved efficiency in processing, marketing and export of the Finnish organic food items and of organic niche products is stressed (VN, 2013).

Several problems have been identified: Co-operation along the organic food chain is not satisfactory, and the field is fragmentary (SRE, 2008; VN, 2010). Factors hampering the use of organic food (as well as local food) specifically within the public catering sector are often quite practical, i.e. uneven availability and low degree of processing of the products as well as the impact on the purchasing costs (Ministry of the Environment, 2009; VN, 2009). Other problems deal with the strategic decision-making, lack of knowledge on purchasing procedure, lack of education among the municipal procurers and with the underdeveloped purchasing process focusing only on price (VN, 2010).

³ <http://www.portaatluomuun.fi/en/page/2>

In the policy documents various practical measures to boost organic sector are brought up, but little attention is paid to the actual research needs, the notable exceptions being the disquisition on food choices and steering instruments (SeTu, 2010) and the government's food policy report (VN, 2010). The importance of research is, however, appreciated on a general level (SRE, 2008; Food Strategy, 2010).

It is recognized that the field of food research is fragmented. The competitiveness of the Finnish food sector can be improved through multi- and interdisciplinary basic and applied research. Food research needs to develop cooperation, mutual research interests and coordinated resource funding with natural resource and environmental research as well as with research on health and wellbeing. The strategic goals of upgrading the products and of marked expansion of the food sector require increasing the resources for research and innovation considerably (VN, 2010).

Among the research topics specifically brought up in the policy documents, food self-sufficiency including self-sufficiency of protein feed and the plant breeding in view of adaptation to climate change are considered as important topics. Food chain research, development and innovation focusing on consumers is among the topics specifically mentioned, as well as research on food education and its implementation, both in practice and in teachers' training (SeTu, 2010; VN, 2010).

3.3. Research dealing with organic sector

3.3.1 Research institutes

Finnish Organic Research Institute⁴ was founded in 2013 with the aim to coordinate organic R&D in Finland and to improve connections with international research. Four main fields of the research are specified: primary production, environmental impacts, nutrition science and social aspects of organic food chains including politics, consumers and markets. The institute is a network organization focusing on multi- and interdisciplinary research, science communication, adult education and co-operation with entrepreneurs. With one of the key tasks being the strengthening of interaction between research and economic life the institute stresses transdisciplinarity. Transdisciplinarity means that the practical actors are involved in research and due attention is paid to their tacit knowledge (Bruun et al., 2005). It is, thus, an important step forward from multi- and interdisciplinary approaches, which is carried out by the researchers.

The main physical organizations involved in organic research are the University of Helsinki and MTT Agrifood Research Finland, but R&D is to some extent carried out also in other universities and in high schools of applied science. In continuation, all R&D most likely will be linked to the activities of the Organic Food Institute.

3.3.2 Research related to organic sector

The expert organizations intermittently gather the research needs from the field. Based on these, an overall frame is outlined in form of research programs extending over several years. The research projects are then fitted within the programs. Organic research is, thus, based on extensive research programs, which capture the research needs of the time period in question. These have been compiled by MTT AgriFood Research on the basis of the experts' perceptions.

During 1992-2006 three extensive organic research programs have been implemented: 1992-1995, 1997-2000, 2002-2006. A new program is being finalised for 2014-2018. This program will be updated annually. The first two programs 1992-1995 and its updated version 1995-1997 had a heavy emphasis on the primary production. Cultivation technology, plant protection and animal and plant breeding as well as environmental questions were the priorities of the research agenda. The latter two programs, 2002-2006 and the new one, included also topics that deal with food items and their quality, economic profitability and societal aspects such as policy, markets and consumers of organic sector.

⁴ <http://www.helsinki.fi/ruralia/luomuinstituutti/english.htm>

The research programs are important signposts for organic research in Finland. However, without resources specifically allocated for the research, the impact of the program on the research actually carried out may remain modest. Regarding the government's strategic research financing, Ministry of Agriculture and Forestry is the main advocate for organic research. Only for the most recent program for 2002-2006, financial resources were reserved for the implementation and the research areas of that program were fully appreciated. The present program has funds only for the coordination. Other sources need to be found to finance the research itself.

The research registers of the University of Helsinki and MTT Agrifood Research Finland gave altogether 140 projects that are linked to organic research, starting from 1987. The great majority of the projects (88) deals with primary production, 13 projects focus strictly on the environment, 8 projects have a food system approach from comprehensive sustainability perspective. A great number of the studies were based on field experiments that were carried out to study nutrient leaching and cycling. Other studies have focused on comparing organic vs. conventional production modes, on plant variety tests and on improving the profitability of organic farms. Three projects were initiated to coordinate organic R&D within the newly founded Organic Research Institute.

Out of the remaining 31 project 24 are oriented specifically to some aspect of policy, markets and consumers, and 7 projects focus on specific food items and/or their quality. The projects of the latter two categories cover topics such as change and learning processes, communication, actors' interaction and networking, supply chain approaches and public catering. Several studies focus on local rather than strictly on organic food. These emphasize geographic proximity of production and consumption, but the registered PDO and PGR labels have not been specifically the issue. Profitability of organic production has been addressed, but only on the level of specific actors, not on the level of the whole supply chain. Other important topics are formation, development and characteristics of the organic value chains and networks, and the prerequisites for their functioning (see Risku-Norja, 2013).

In recent years, the interest in these research topics has been growing. The emerging research also attempts to address the supply chain as a whole instead of focusing only on a specific actor group or on specific products. The pioneering work using the supply chain management approach and developing the new approach to the interaction among actors in organic food chains was Kottila's PhD thesis (Kottila, 2010).

4. Summary and discussion

In the development of organic sector two phases of expansion can be identified. The first dates back to 1990ies. During this time period the organic production became firmly established and its share from the cultivation area increased from practically nil to about 8%. The share remained at about this level during the first decade of the new millennium. The second expansion is recent, and has started at about 2010. The two important contributing factors are the formulation of the new promotion programs targeting specifically the organic sector (VN 2013) and the local food sector (MMM 2013), and the foundation of the Finnish Institute for Organic Food in 2013.

One possible explanation for the stagnation during the first decade of 2000 can be suggested by examining the policy goals in parallel with the development trends of organic production and consumption in Figure 1: During the nineties, organic sector was unambiguously addressed. In the beginning of the 2000, the sustainability issues became a major concern also within the food sector. The concept local food was introduced and it rapidly gained momentum over the next ten years. The environmental issues stressed especially in the 1990 and before in connection with organic production gave way to more comprehensive sustainability strivings. In the more recent policy documents local and organic food are usually not differentiated from each other, and positioning of organic food in relation to local, domestic and regional food is not clear.

Another reason for the fairly low demand for organic food may be the good reputation of domestic conventional food, which is perceived as pure, safe and tasty. Healthiness is the most important driver to buy organic products among the Finnish consumers, but ethical and environmental

aspects are also brought up (Sarkkinen et al., 2006; Muukka, 2008). Environmental concerns are important drivers among the younger consumer groups, whereas older people stress health aspects. Often the consumers prioritize domesticity of the products rather than their organic nature (Lehtola et al.; 2008; SRE, 2008; Latvala et al., 2011). It should be also noted that changing prevailing food system structure and functioning, and expanding the use of organic food is a slow process. The availability and delivery problems are accentuated in a sparsely populated country like Finland.

The research related to organic field in Finland has been very much focused on the primary production, the production methods, yields and environmental impacts. So far, much less attention has been paid to the societal, policy aspects and to the supply chain as an entity. In the research with the comprehensive food system approach the environmental and/or societal and/or economic emphases overlap, but in these studies the supply chain point of view is largely missing.

Several bottle necks regarding the development of the organic supply chain have been pointed out in the national goals and strategies dealing with organic production and consumption. The research needs can be inferred from the overall food policy goals and from the various legislative, informative and practical hindrances that have been identified to hamper the development of the Finnish organic sector. The studies focusing on the consumer attitudes and on the R&D aiming at promoting organic food within the public catering sector are in line with the national strategies. So far, in the research of the organic field carried out in Finland the international perspective is almost totally lacking. In two on-going studies, the European experience is used to develop the approaches suitable for the Finnish circumstances, but exploring the organic food chains that cross the state borders has not been among the research topics.

The research has moved from agronomist emphasis to deal with market developments and behavioral change by private and institutional consumers thus widening the disciplinary scope. However, new scientific-technical issues are being raised in the field of agronomy as the sector is contested by ever new demands for global food production and competition from GMO developments. The societal questions are, thus, likely to be increasingly addressed also within the agronomist research approach.

Since the organic sector is still rather marginal in Finland, it appears that either the research design or communication of the research results to the relevant actors so as to open the bottle necks has not been very successful. However, there are signs that the situation is already changing. This shows that over the past few years the knowledge transfer between science, policy and food chain actors has improved. In future, the research will be coordinated by newly founded Finnish Organic Research Institute, and the situation regarding the supply chain-oriented research is likely to improve further. The institute stresses the need of science communication, adult education and co-operation with entrepreneurs in research. The transdisciplinary approach involves both the researchers and the practical actors. This enables designing the research so as to better respond to the needs of the organic sector and to the expectations of the society.

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