

From organic farmer networking to organic knowledge system

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Abstract: *Organic agriculture represents a complex radical innovation implementation of which demands development of new knowledge. Initiated as opposition to conventional agriculture and its surrounding knowledge system, organic agriculture has developed into informal farmer networks that have functioned also as crucial knowledge sources. Drawing on the case study of Latvian organic agriculture, the paper aims at understanding the development of organic knowledge system and in particular the role of farmer networks in it. Under the network and social capital theories, the knowledge system is analysed as a construction of new socio-technical network. The analysis shows that, despite the ongoing institutionalisation of organic knowledge system, farmer networks continue to perform as key agents in generating and disseminating knowledge. However, better cooperation among formal knowledge institutions and farmers is needed in order to valorise local knowledge and build organic knowledge system.*

Key words: *organic agriculture, farmer networks, knowledge system, institutionalisation*

Introduction

The continuing spread-out of organic agriculture over the globe (Willer and Klicher, 2009) since couple of decades testifies transition to sustainable agro-food model. Organic agriculture represents a complex radical innovation based on new values of economically viable, environmentally sound and socially fair agriculture that involves not only substantially distinct production technologies, but also new approach to farm management, farmers' collective organisation and to market strategies. The sharply different approach of organic agriculture to agricultural production and to the whole agro-food system builds on a new knowledge base and prescribes alternative knowledge processes to those of conventional agricultural system (Morgan and Murdoch, 2000). Therefore, transition to this sustainable agriculture model depends on establishing new efficient knowledge and learning system.

Unlike many other agricultural innovations which are driven by science and delivered to farmers as comparatively standardised ready-made knowledge in quite top-down manner, organic agriculture emerged as informal movement initiated by farmers and environmental activists. Studies in various parts of the world confirm the role of farmer networks in the growth of organic agriculture (Assouline and Just, 2000; Blanc, 2009; Kroma, 2006; etc.). Their most substantial contribution has probably been knowledge of production and delivery based on social learning. The intrinsic value of these networks' knowledge functions is increased by the fact that, being opponents to the dominating conventional agricultural model, organic farmers initially did not receive any support from traditional knowledge institutions – research, educational, advisory. Jorgensen (2006) states that dissemination of knowledge about organic farming has been even hampered by the dominance of scientific knowledge associated with conventional food production, which has acted as a major barrier to conversion from conventional farming methods.

The local origin of organic farming means also that organic agriculture as farming system is strongly embedded in local environment and local knowledge. Sumner (2008) argues that most of organic farming knowledge has not been developed through the formal education system or by conventional science; instead "it has been developed, tested, protected, passed down and expanded upon by practitioners in the field – organic farmers communicating with other organic farmers." As farming practice, organic agriculture is referred also to preindustrial agriculture based on ecological cycles. Nevertheless, it is clear that although modern organic agriculture shares the use of naturally occurring biological processes with ancestor methods, it absorbs as much modernisation and science

advancements. Ingram (2007) shows that although alternative agriculture movements have largely been in opposition to conventional knowledge system, they use the scientific knowledge to strengthen their positions among farmers, policy makers and other food system agents. The principles of modern organic agriculture (improving soil fertility, using natural regulation and diversity to prevent pests and diseases in crops and livestock, using little additives in processing, etc.) present broad opportunities for scientific and technological innovation that would help to meet sustainability goals (Niggli et al, 2008).

Knowledge and learning processes in organic farming are increasingly studied. Morgan and Murdoch (2000) in their comparative study on organic and conventional agriculture knowledge systems conclude that the organic agriculture model affords more scope for tacit and local knowledge which re-establish farmers as more autonomous “knowing agents” both at farm and food-chain. Kaltoft (2001) examines differences in values and practices at the level of agro-scientific knowledge related to organic farming and regards them in the context of ongoing institutionalisation of organic farming. Aerberhard and Rist (2009) have analysed the development of organic agriculture in Switzerland as a process of transdisciplinary co-production of knowledge among farmers, extension agents and researchers. Sumner (2008) has detailed the indigenous aspects of organic knowledge; etc. However, despite the growing research on organic knowledge processes, collective construction of knowledge and innovation in organic agriculture is still quite unexplored (Lamine and Bellon, 2009).

By focusing on farmer networks as significant agents of knowledge and learning process, and capturing the conditions of framing context, the purpose of the paper is to understand the development of organic knowledge system in Latvia. Using network approach, in particular, actor network theory (Callon, 1986; Law, 1986, 1992; Latour, 1996, 2005) that provides a frame for analysing innovation dynamics, and in social capital theories (Bourdieu, 1986; Putnam, 2000; Fukuyama, 2001) that illuminate the role of social networks, the construction of organic knowledge system is analysed as resulting in agents’ interaction within certain socio-political environment. The paper focuses in particular on organic farmers and their networks as they appear to be the central actors in organic knowledge system. Their knowledge and learning strategies are analysed in detail and reflected in the context of organic knowledge system dynamics. Finally, the paper discusses the perspectives of organic knowledge system development in the context of continuing institutionalisation of organic agriculture and transforming agricultural knowledge system towards more participatory model of functioning.

Methodology

The research is based on case study approach. The case of Latvian organic agriculture network is used as an example for the exploration of the construction of organic knowledge system. The case study comprises both the valorisation of previous research work - the data have been derived from several studies performed with the participation of the author, dealing with organic knowledge issues (EC research projects “*Making Agriculture Sustainable: Role of Farmers Networking and Institutional Strategies*”, “*Transformation of Rural Communication*” and “*Encouraging Collective Farmers Marketing Initiatives*”) - and additional interviews with the representatives of organic knowledge network and document analysis (organic farmers bulletin, policy documents). The case is presented and analysed in dynamic perspective: the situation is captured at two time periods that allows to identify transformations in organic knowledge network. The first period of data gathering dates from 1999, and during it both retrospective data about the initiation of organic farming in Latvia and data on the current situation were obtained. This period corresponds to the start-up of organic knowledge network formation. The sources of data were semi-structured interviews with major knowledge actors at the time – 27 organic farmers and their three leaders-advisors were interviewed. Additionally, direct observations were made at organic farmer events – group meetings, seminars and a congress. The second period of data gathering covers the mid of the first decade of the 20th century when institutionalisation of organic agriculture in Latvia has considerably increased in the result of its political legitimation. Subsequently, also knowledge processes become more

formalised since new knowledge institutions (educational, advisory, research) started to operate. The data sources include semi-structured interviews with five organic farmers, five experts (three advisors, a scientist and organic policy expert) and document analysis.

Networks as knowledge device

During recent decades in sociology networks have been brought in the foreground as the major organising framework of contemporary society (van Dijk, 2006; Castells, 1996). Also contemporary rural development processes are increasingly becoming of network-type character that finds expression in multisectoral collaboration, partnership formation, clustering of economic actors etc. Murdoch (2000; 2006) describes these processes as a shift to networked rurality in which networks become the dominating form of organisation both in rural economics, social life and political sphere.

There is a range of studies in various theoretical fields performed on how networks facilitate innovation and knowledge. Several contributions regarding the network impact on innovation and knowledge can be summarised as follows. Networks as social links based on trust, shared values and norms facilitate cooperation, including the innovative one (Putnam 1993). Shared cognitive framework and norms facilitate circulation, exchange, enrolment and creation of knowledge (Reagans, and McEvily, 2003; Inkpen and Tsang, 2005). Such knowledge networking is a precondition for the genesis of innovation: innovations often occur in interactions among various actors with different knowledge stocks (Maillat et Perrin, 1992; Hauser et al., 2007; Tisenkopfs et al, forthcoming). As knowledge is becoming more specialised and widely dispersed, cooperation of agents becomes even a necessity in order to consolidate all the knowledge needed for growth (Brusoni, et al, 2001; Rammert, 2006). Through networks, innovation and knowledge is disseminated and reaches legitimisation in broader society, new markets and policy field. Meantime, there are also studies witnessing the negative impact of networks. Ponzio and Scoppa (2010) show that recruiting through informal networks tends to favour related people instead of more competent ones and therefore reduces a firm's competitiveness. Uzzi and Spiro (2005) demonstrate how in small world networks the benefits of intensive information circulation turn into homogenisation of network resources and declining creativity. Certain governing values and norms in networks can sustain their isolation and resistance to new knowledge.

Actor network theory (ANT) provides tools to understand how new knowledge networks are constructed. It is quite broadly used in analysing transitions towards sustainable agricultural systems (Arce and Marsden, 1993; Lockie and Kitto 2000; Kaltoft, 2001; Ingram, 2007; Trauger, 2009, etc.). From ANT perspective, knowledge is generated and reproduced in ongoing agents' interactions. Innovation - a new combination of knowledge - is introduced through a construction of a new socio-technical network. It is an outcome of ongoing agents' interactions, during which they negotiate the network configuration, functions, codes of practice etc. Often the stabilisation of knowledge network is multidimensional and demands intervention in various fields – there are economic, social, technological, natural and political aspects intertwined (Law, 1986). So knowledge creation and innovation construction is collective process and it is not limited exclusively to the capabilities of scientific staff; instead, there is a wide range of actors involved. The particularity of ANT is the integration of non-human actors in innovation network by attributing the cementing function of relations to them. Durable artefacts keep inscribed codes of practice into them. (For instance, organic standards define production techniques, organic certificate confirms certain qualities of product etc.) They function as intermediaries between agents maintaining and advancing their relations and allowing "long distance control" (Law, 1986). Interactions among agents are aimed at reaching stability in the network, that means also acceptance of the knowledge framework and acting accordingly to it. Once a network is stabilised, it can become a starting point for further networking or it can be integrated as a node in other networks. However, the stabilisation is not evident because of the different interests among the involved agents. Even once solved, conflicting issues may reappear and question the accepted established codes of practice, roles etc. Therefore, a network always remains subject to changes in a way.

Social capital theories add to explanation of collective construction process of knowledge networks and the reach of knowledge consensus. Social capital, understood either as individual asset of network relations (Bourdieu, 1986) or collectively shared values and norms (Putnam, 2000; Fukuyama, 2001), facilitates cooperation, which involves also knowledge exchange and consolidation and the developing shared knowledge base

The distinguished various types of social capital: strong and weak ties (Granovetter, 1973), bridging and bonding social capital (Putnam, 2000) have different significance in knowledge processes. Strong community ties and bridging capital are characteristic to relations within a homogenous community. They stimulate knowledge exchange and sharing within the community, adding to its solidity and increasing its collective action capacity. Weak, peripheral links and bonding capital exceeds the particular community borders, and these weaker and more diverse relationships enable access to external knowledge, ideas, skills and resources not otherwise available (Magnani and Struffi, 2009). The weak ties and bridging capital are of particular importance for innovation as they provide access to new knowledge and therefore broaden and diversify community's knowledge base.

Following the network approach, the further task of the case analysis is to identify organic knowledge agents and capture their strategies and their outcome in building organic knowledge network.

Organic agriculture in Latvia: general characteristics

First organic farms in Latvia were established in the beginning of 1990s. Since then, from a couple of tens of farms the organic farming sector has grown up to 4202 organic certified farms which cultivate 161 651 ha or 8.5 % of the total agricultural land. The main production areas are crop production, including cereals and vegetables, and dairy farming (Zariņa, 2009). The growth was the highest in the period between 2003 and 2006, which corresponds the time right after the political legitimization of organic farming by adopting legal regulations and introducing public support. The increase of organic production has enhanced the consolidation and dynamics of organic market. During the last couple of years, new market initiatives, cooperatives, processing companies have been established. Formal education, training and research sectors develop.

Initiating organic knowledge system

The start-up of organic agriculture in Latvia overlaps with the general transition process in the country at the turn of 1980s and 1990s from soviet command economy to democratic and free market regimes. In agriculture those transformations implied liquidation of collective farms, land restitution and establishment of private farms. Although the new state's agricultural policy was aimed towards efficiency and intensification of production, the new agriculture system based on private individual farms offered more possibilities for alternative farming models. Some, still few though, new farmers decided to develop their farms as organic.

An important work in introducing and disseminating ideas and knowledge of organic agriculture in Latvia was performed by foreign organic agriculture specialists. This supports the thesis found in sources that innovation is often stimulated by external knowledge. The first theoretical courses and practical experiments on organic farming in Latvia started almost simultaneously, but independently in two districts: in Liepāja they were organised with the support of German biodynamic agriculture specialists; organisation "Viedas Sadraudzība" in cooperation with a Canadian Latvian and with the support of the Ministry of Agriculture organised theoretical courses in Rīga and practical experiments in Cēsis with the support of local agricultural advisory service (Blaus, 2003),

On Latvian side the research in organic agriculture was initiated by the enthusiast agronomist Heinackis at the end of 1980s. In Liepāja district, he carried out field experiments, explored organic methods and their applicability to local agro-environmental conditions. In 1989 when the first German organic agriculture specialists visited Liepāja they found the agronomist as a devoted

partner. Together they organised a meeting for local farmers, agricultural scientists, advisors and other interested persons; during the meeting, organic agriculture was firstly presented to agricultural audience.

The German experts had evoked interest about organic agriculture among local farmers, and soon a visit was organised to German organic farms. The visit strengthened farmers' interest in organic agriculture. This supports the statement that farmers trust in their peer knowledge and visible practical results of innovation are convincing in order to adopt it.

These meetings started long-term cooperation between German experts and local farmers. Hereafter they arrived regularly in Latvia with the main aim to provide knowledge about organic farming. They initiated also the establishment of the first organic practice farm „Izriedes” in 1990, which became possible with the support of the local agricultural office that allocated land, buildings and funding for technical equipment. The farm became an organic knowledge centre for theoretical courses and field experiments. German experts facilitated also social networking and social learning among farmers. They induced establishment of organic farmer groups, which afterwards became the central support organisations for farmers during several years.

Foreign experts provided information and knowledge, guided practical experiments and ensured monitoring and control over production. However, there were local leaders – agricultural and environmental activists who were spokesmen of organic farming in farmer community and assumed assembling, organisation and heading of local farmers. They personally addressed farmers informing them about organic agriculture and inviting them to convert. The local leaders have initiated various learning activities – seminars, field experiments, field visits, etc. Professional and organisational skills are often accompanied by great personalities: they are often characterised as active, altruistic, encouraging. The role of local leaders confirms them as key nodes in new knowledge networks.

The multiple role of local leaders is well characterised by one of them – Māra. She is one of the organic agriculture pioneers in Latvia and performs as multifunctional agent: she is intellectual leader, organiser, manager, market specialist and advisor for local organic farmers. Māra has motivated many farmers in her region to convert to organic farming by talking to them individually. She has organised lectures on her farm, gives advice, represents local organic farmers on various organisations and is their marketing agent. Organic farmers recognize that she is the major driving force of organic agriculture in the region.

During the upcoming years, organic agriculture developed through social networking of farmers. Mobilised by local leaders, they engaged in groups established on the base of shared interest about organic farming and the need for knowledge to implement it.

The farmer groups functioned as a solid support base for farmers. They provided important psychological support – the situation in agriculture, which was still undergoing structural changes and was cumbered by inconsistent state agricultural policy and insecure market, was unstable in general, provoking dissatisfaction and frustration among farmers. Moreover, at the time organic agriculture was not approved by the majority of conventional farmers, agricultural specialists and policy makers. That caused tension in farmers and hindered farm performance (e.g., lack of advisory services regarding organics, misunderstanding and derision on the part of neighbouring farmers). In the groups farmers found people who shared their views, ideas and values.

The groups operated as collective learning and knowledge centres where knowledge was accumulated, created and exchanged. Training courses, informative seminars, farm visits, collective practicing of organic methods etc. were organised that facilitated networking, social learning and collective knowledge generation. The knowledge function performed by the groups was of particular importance. At the time period there was little knowledge available about organic agriculture. Agricultural advisory services and agricultural educational establishments had no specialists in organic agriculture, and the available literature was limited. The organic farmer organisations were the most important and in many cases the only ones that could provide any knowledge support.

Experience of farmer learning in groups as witnessed by farmers:

"In my case, education in organic agriculture was obtained in the group. Previously when German experts came, we participated regularly in their lectures. I took over their farming experience. When we come together we talk over among ourselves who is succeeding in what, how someone has struggled against diseases and weeds, what the other one has experimented and created."

"[In the group] we meet and get to know lot of new things we did not know before. Everyone tells what knowledge was meanwhile acquired somewhere. And we share it. Because there is very few literature for organic farmers at present. [We learn] only mutually exchanging what we have explored and found... We discuss crop rotation, what each has tried, also sowing – what and how is better what new green manure has been discovered. That is most significant."

Such networking facilitates innovation by interpersonal encouragement to experiment, knowledge sharing, collective learning and generating new knowledge, reducing risks related to innovation. In turn, collective knowledge activities have resulted in strengthening organic farmers' collectivity.

Finally, it should be mentioned that the groups took up lobbying activities in order to gain political legitimacy and in such way strengthen their positions in the market and in society in general. These activities became more coordinated when the national association of organic agriculture (Latvian Association of Organic Agriculture (LAOA) was established in 1995. It took up active lobbying policy in order to receive state support. LAOA engaged both in direct negotiations with the Ministry of Agriculture as well as used alliances with other farmers' organisations collaborating with the ministry. Still, there were very few organic farmers (till 2000, their number did not exceed 100) with limited influence in policy and in professional networks, and their political lobbying activities brought insignificant results.

At this initial phase, organic knowledge system remains informal. Farmer groups operate as organic knowledge nodes, where knowledge is mobilised, accumulated, exchanged and created.

Institutionalisation of organic knowledge system

An important impetus for national policy makers to include organic agriculture in policy agenda and develop corresponding regulations has been the EU accession process, started in the middle 1990s. It envisaged adjustment of the national and EU policies, also in the field of agro-environment. The first step towards it, marking a turning point in the national agriculture policy from production-oriented to sustainable and integrative approach, was made in 1998 when the first support measures for sustainable agriculture were defined in the National rural development programme. Specific support programme for organic agriculture was launched in 2001. It was followed by arrangement of the respective institutional environment – regulations on organic production and distribution were developed and certification and control bodies were designated. All the necessary legislative and regulative acts for organic agriculture became operative in 2003.

The political legitimisation of organic agriculture contributed to formalisation and institutionalisation of organic knowledge system. Improvement of organic education, science and advisory system was declared among the major policy tasks in the sector. Corresponding measures were provided that had to result in coherent organic educational system, competent advisory system and developed science (Ministry of Agriculture, 2003).

Several agricultural research institutions started to carry out organic research as public funding became available. Courses on organic agriculture have been introduced in the curricula of agricultural education establishments - the University of Agriculture and several agricultural vocational schools. National Rural advisory and training centre (RATC) complemented its services by courses and advice on organic agriculture. The available courses and advice considerably increased access to knowledge. In the meantime, they have some fragmenting impact on organic farmer

community, as converting farmers may do without the support of other organic farmers and organisations.

Although knowledge creation and dissemination functions have been taken up by advisory, scientific and educational institutions, organic farmer groups continue to be an important knowledge backup for farmers, and informal knowledge and learning networking remain intensive. Farmers continue carrying out farm experiments, gathering in groups and exchanging knowledge. The pioneer organic farmers who continue the scientific work started during 1990s, nowadays have accumulated invaluable store of experience and knowledge. In the meantime, the groups also engage in cooperation with the formal knowledge institutions. As a representative of the University of Agriculture witnesses, they were organic farmers who brought the interest about organic farming to the university:

“The interest [about organic agriculture] started in farms sooner than at the university. Farmers started to invite us to various lectures and seminars... We, scientists, went to look at how the pioneering [organic] farmers worked, what they did.”

Some of those institutions' knowledge activities are initiated and/or carried out by organic farmers. Organic farmer leaders who have acquired considerable experience in farming cooperate with the RATC to provide educational course on organic agriculture. Farmers engage in cooperation with scientific institutions in carrying out scientific research. For example, a farmer cultivating hemp and willing to develop new product for the market has initiated research at the University of Agriculture on hemp milk. There are cases when the cooperation between research institution and a farm is even a necessity as some research institutions don't have all the practical means for experiments and therefore they are implemented on farmers' farms. Cooperation between farmers and research and advisory institutions contribute to the synergy of local and scientific knowledge. However, although there is interest among farmers about new organic knowledge they are quite reluctant in applying scientific knowledge generated in research of scientific institutions and they are more open to other farmers' experience.

Together with political legitimation, organic knowledge system has been partly formalised. Organic farming has become strictly regulated by organic production standard, and controlling and facilitating institutions are designated that supervise its application. Although these measures protect producers and consumers from possible fraud, they pose considerable administrative and financial burden on organic farmers. Unlike the operating control system, research on organic agriculture remains low largely due to the limited public funding. Due to the financial and economic crisis in the country, this support has even decreased resulting in slowing down of scientific and research work, which is still backing much on individual interest of researchers willing to continue the scientific work.

Discussion

Two relative stages can be identified in the construction process of organic knowledge network, which correspond to the extent of institutionalisation of organic agriculture. The first stage of grounded knowledge is characterised by the dominance of informal knowledge activities: farmer-to-farmer knowledge exchange, learning by doing, experiments on farms, collective learning in groups and few expert and minimal scientific knowledge involved. In the second stage formal knowledge institutions engage in organic knowledge system. They introduce more scientific, expert, coded knowledge. Knowledge and learning processes become more standardised and formal.

The institutionalisation is often seen as involving dissolution risks for grounded organic knowledge system and even to the identity and ideology of the whole organic community. Jorgensen (2006) expresses concern that the institutionalisation of alternative knowledge of organic agriculture means that it is increasingly being incorporated in the very system to which the movement was originally opposed. Institutionalisation along with standardised regulations involves the risk of losing diversity of organic knowledge (Kaltoft, 1999; Vogl et al., 2005). Aeberhard and Rist (2009) argue that together with the increasing institutionalisation of organic knowledge system also transformation of organic

community takes place, because more farmers driven to organic agriculture by economic reasons engage. They observe also disintegration both within organic farmer community and between farmers, researchers and extension service that lead to decrease of exchanges between scientists and farmers and their innovation potential. Some disintegrating tendencies in organic farming community appear also in Latvia, like the increase of farmers with economic motivation and individual learning approach which becomes possible due to advisory and educational establishments.

Confrontation between local and scientific agricultural knowledge during formal institutionalisation becomes apparent. Clark and Murdoch (1997) who have analysed the relation between scientific and local knowledge show that science ignores local knowledge and entering local arena it reconstitutes local knowledge base. They argue that better creative solutions would be possible if scientific knowledge opened itself up to non-scientific ways of thinking. Similarly, Csurg et al. (2008) underline that in order to reach sustainability goals, exploitation of local knowledge through networked local actors is an indispensable condition. On the other hand, they state, "the exclusion of local, lay knowledge from projects leads to the exclusion of local people, intensifies the intervention of non-local institutional and individual actors, and threatens local cultural and social autonomy." Organic farmers possess considerable knowledge stock that can contribute to establish overall sustainability in agro-food system. So far not all the potential of farmer knowledge and their knowledge networks have been optimally used and integrated in the formal organic knowledge system. New possibilities to farmers networking, social learning and valorisation of their knowledge appear due to transformations in education and advisory system towards more open, interactive and network-type structures. For instance, the reforms of service delivery at the RATC envisage application of more participatory approaches – learning in groups, on-line platforms etc. This will enable more active farmer role in learning process.

Despite the incompatibilities in scientific and local knowledge processes, the development of modern organic agriculture depends also on scientific advancements. The importance of the development of organic scientific knowledge is related to the fact that it serves not only for the improvements in organic production but also for obtaining legitimacy in broader society as it provides sound explanations for the advantages of organic agriculture. Scientific and local knowledge stocks can be better integrated by developing closer cooperation scientists, extension service and farmers. Farmers' personal involvement in scientific research facilitates the dissemination of scientific knowledge in organic farming community since peer knowledge and experience are easier accepted. Other studies show that more participatory learning platforms enhance farmers' ownership over research and learning processes and facilitate that interventions improve the livelihood of farmers and farming communities in a sustainable way (van de Fliert et al., 2002). For that purpose also organic farmer organisations themselves should not only promote organic knowledge, but also attempt to institutionalise the forms of knowledge production, through which organic agriculture has been developed (Aeberhard and Rist, 2009). In the Latvian case the informal knowledge network of farmers was enough consolidated – stabilised so that it could induce new knowledge activities – cooperation with scientific research institutes, advisory measures, and by that extend its knowledge network. On the other hand, those formal knowledge institutions have their knowledge development strategies and their interaction with farmers' informal knowledge should be still studied more in detail. Together with the development of the organic sector, its actor network is extending as new actors engage, which broadens also its knowledge base. They are not only advisors and scientists who can propose relevant knowledge, but also market actors (processors, traders), NGOs, local governments etc. Further research is needed to understand also the impacts of the diversification of agents on organic knowledge system.

Conclusions

Initially based on social learning in organic farmer networks, organic knowledge system has grown up to institutionalised forms of knowledge processes. Organic farmer networks have played the central

role in initiating and disseminating organic knowledge in Latvia. They acted as informal knowledge centres for social learning. Political legitimisation of organic agriculture increased its institutionalisation and new, more powerful agents entered also the organic knowledge network introducing their knowledge perspective. Nevertheless, organic farmers and their organisations keep their position of key agents in organic knowledge and learning processes. Their networks based on shared values and goals remain a trustable source of knowledge for farmers. The active role of organic farmers along institutionalisation make them not only knowledge consumers but also equal partners in knowledge creation. However, more cooperation between farmers and formal knowledge institutions is needed in order to valorise farmers' local knowledge and make optimal use of scientific knowledge.

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