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## Do local food supply chains meet the targets of sustainable livelihood? A case study in Central Finland

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**Abstract:** *Community resilience refers to a community's capacity to actively adapt and evolve by balancing internal and external driving forces in a sustainable way. In this paper, emerging local food supply networks are analysed in terms of social capital and community resilience. Firstly, the links embodying trust or the lack of trust in the local food networks are studied. Secondly, we examine how social resilience is created at the community level. Our empirical case study on Central Finland combines quantitative and qualitative approaches. The core data are drawn from the survey exploring farmers' collaboration and networks and from in-depth interviews with four local stakeholder groups representing different positions in the local food chain. It is concluded that in Central Finland the community resilience is advancing with slow steps of adaptation to external challenges. Yet, there are several peculiar challenges in the Northern Model of local food system.*

**Keywords:** *social resilience; rural sustainability; local food production; small scale entrepreneurship; food networks; central Finland*

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### Introduction

Food, community and the place are intertwined in our lived worlds and across time (Feagan 2007). During the last two decades, food systems have been emphatically politicized in high consumption societies through differentiated

consumers demand and also through regional initiatives to secure local food supply or to produce quality food to the more demanding consumers (Renting et al. 2003). Local food has been introduced as a means to endorse farm livelihood and rural sustainability (e.g. Marsden and Smith 2005). Local food is also conceived to imply improved food security and decreasing the ecological footprint of the food system (e.g. Brunori 2007).

However, conceptualizing the local food networks and their relationship to the conventional food supply chains should not be oversimplified (Higgins et al 2008). Local social interactions do not automatically correspond to desirable forms of social and environmental relations (DuPuis and Goodman 2005). Further, in order to make success on the markets, local producers often have to penetrate through a considerable thicket of societal preconditions that may vary from state to state and from region to region (Schmid and Sinabell 2007). Also natural circumstances differ greatly when considering what is feasible in terms of local agricultural production.

In this paper, emerging food supply networks are analysed in terms of social capital and community resilience. The analysis is focused on northern Europe, more specifically on the case of Finland. Community resilience refers to a community's capacity to actively adapt and evolve by balancing internal and external driving forces in a sustainable way, which resonates with the needs and aims of the local actors (e.g. Adger 2000; Folke et al. 2002; Langridge et al 2006). Local actors are the major social resources at their constituencies and, therefore, we expect that they perform an important role in launching initiatives in order to improve measures for attaining sustainable livelihood. A rural community with agricultural enterprises is not isolated from the external world and, importantly, the outside influences are not only bringing new risks and demands but also options and facilities for improved livelihood.

The modernisation of Finnish society has resulted in quite late but then rapid transition of the industrial structure into a service-dominated society and also in the depopulation of rural areas. Finland has experienced two waves of rural-urban migrations since World War II which have affected essentially the livelihoods and socio-cultural patterns of rural communities (Katajamäki, 1999; Jokinen et al. 2008). The first rural depopulation, which intensified in the 1960s and early 1970s, was connected to the revolutionised technological working methods in forestry and agriculture. This phase, in which numerous small farms closed their production and entire villages were deserted, has been defined even the fastest rural depopulation among the western industrial countries. The second wave of Finnish rural depopulation in the 1990s was based on the rise of information technologies and the globalisation of mass production.

As Finland joined the EU in 1995, a major impact appeared not only on domestic agriculture but also on the market forces and public institutional norms affecting rural livelihoods. Tykkyläinen (2005) identified two major factors dominating recent rural restructuring in Finland: both the decline in primary

sector employment and the re-organisation of the public service sector are pushing people out of the countryside. Counter forces such as the emergence of small rural enterprises are not strong enough yet. However, the current rural development has also encouraged local stakeholders to look for new alternatives of rural production and local livelihood. In a way, rural communities are at present subjected to a resilience test where both the individual performance and the community support to novel entrepreneurship do matter.

This paper addresses the links embodying trust or the lack of trust in the local food networks. We also examine how social resilience is created at the community level. Thus, what kind of internal and external driving forces and adoption mechanisms do the local farmers and other stakeholders identify? What is the contribution of different actors to the social resilience of the territorial order? To what extent do the new food production activities reflect genuinely improved community resilience? The empirical case study carried out in Central Finland is presented in chapter 3.

### **Community resilience and territorial order**

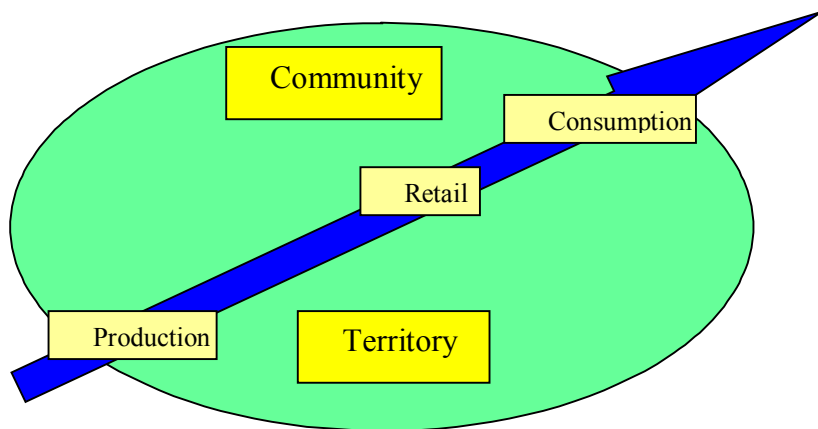
In the era of globalisation, people become increasingly aware that they are in competition with other places for highly mobile capital, productive assets and even for cultural resources (Harvey 1996; Castells 2000; Urry 2000). Consequently, 'selling of place' becomes a target that is expected to support the social resilience of the community and to help its members to prosper. Simultaneously, the 'monopoly power' inherent in place is much reduced, and in a globalising society communities can rarely be self-sufficient (Harvey 1996; Feagan 2007). Yet, the general circumstances experienced by traditional communities may encourage stakeholders to give priority to local cooperation instead of mutual competition over territorial resources, even if it depends on a range of socio-economic and socio-cultural factors.

Besides a site of competition or cooperation, the territory can be understood in terms of local or sub-regional needs, which sums up individual needs of the population residing in the area. However, social needs can also be understood as reciprocal social capabilities, which refer to community resilience covering the developmental aspect of future livelihoods and coping with the change in community (Westlund 2003; Lebel et al. 2006). Moreover, local needs can be contrasted to global needs or needs of any external unit. The more the risk is realised as an exclusion from the benefits of globalisation, the more likely the community's spokespersons will underline the comprehensive needs of the threatened community.

Thus, local communities make a sub-region, which includes both independent action and multiplied interaction with external powers. Besides of needs, the sub-region can be discussed in terms of responsibilities. In order to meet the target of sustainable livelihood, the development must adopt a sustainable way of using natural resources and other goods and assets at disposal. These assets

shall not be employed for situational benefits only; instead, also the future needs and the eco-efficiency of the prevailing practices shall be considered (Wallner 1999). Consequently, the resilience of the practices of local food production, for instance, is to be assessed in the context of space and time.

The assessment of the resilience of the production - consumption chain is a highly complex issue as it often involves also mutually conflicting elements (e.g. Holt and Amilien 2007). For instance, organic products of high quality may be delivered only in small quantities leading to overpricing on the local market and, therefore, they have to be transported to distant markets (e.g. Vasilikiotis 2000). This raises a basic question: would the target of community resilience be better in synchrony with the mainstream products sold at the territorial level than by transporting goods to regions with the most demanding customers (c.f. Wallgren 2006)? Further, should the vegetables be produced in the North all year round with energy intensive methods instead of importing them from the South, where farming is yielding several crops with less CO<sub>2</sub> emissions, for instance? The implementation of community resilience requires both multi-stakeholder and multi-level decision making. Actually, the challenge is to build a certain self-organising community in order to carry on a strengthening social process towards resilient farming and sustainable livelihood (e.g. Marshall and Marshall 2007).



**Figure 1. Territory, community, and the supply chain**

The idea of embedding the supply chain into the sub-region can be described by a conceptual model, which illustrates the organisation of the social and spatial context of the local food supply chain (Figure 1). 'Territory' is here understood as the space containing land, natural resources and human-made landscapes, and utilities belonging to the constructed material environment. 'Community' refers to the institutional social order, which emerges within any kind of constituency framework such as a village, town, or municipality. In most cases, a community is more restricted in terms of space than in terms of territory. Hence, there obviously are many communities within a territory.

The interesting question is how the community is embedded in the territory and how their reciprocal relationship is positioned. An unsustainable social entity is illustrated by a community using the natural resources of its territory into depletion. Such a case would be particularly dramatic for farmers since their assets cannot be easily transferred to other locations. Territory is also the location of territorial heritage, which is an essential part of the socio-economic and socio-cultural assets involved in local food activity (e.g. Battaglini 2005).

The local implementation of sustainable development means that development is translated into action guaranteeing livelihood for local actors (Järvelä et al. 2009). The analytical distinction between the community and territory in regard to sustainable development and resilience then appears crucial. Community resilience can be discussed as the capacity for action of the community actors and institutions (Gibbs 2000). We can also examine the contribution of different actors to the social resilience of a territorial order. Certainly, these two aspects are often linked. However, this is not necessarily the case as farmers may organise the production in a way, which does not affect the community directly but still has considerable impacts on the resilience of the territory. For instance, a farm selling its entire production outside the community, even outside the territory, still leaves its foot print on the local environment – perhaps without much value added to its local constituency.

### **The case study: data and analysis**

The strong re-structuration of the Finnish countryside has resulted in the rise of the number of passive farms. On the other hand, production activities have also become more heterogeneous. The number of diversified farms, which are running not only agriculture and forestry but also other, non-agricultural businesses, is increasing steadily, and nowadays a third of all Finnish farms count as diversified farms.

Our empirical case study focuses on Central Finland with approximately 260,000 inhabitants. Its capital is Jyväskylä and the population and business have centred in the Jyväskylä region with 133,000 inhabitants. As in whole Finland, the number of farms is decreasing but the average size of production units is increasing. At moment, there are approximately 3,500 active farms in Central Finland, and primary production contributes five per cent to the employment which is about the same share as the average of the whole country. In Central Finland, the strong factors of agriculture include large forest resources, a good level of pluriactivity, and co-operative practices between farms. On the other, the scattered field structure and the still low average size of farms may be considered weaknesses at the regional scale. More than a half of the 3,500 farms are livestock farms and over a third are dairy farms. The average field area is 29 hectares and the average forest area is 66 hectares per farm. The latter figure means that forestry is still a foremost farming activity in terms of economic viability. Around half of the farms in the area have other entrepreneurial activities besides agriculture and forestry.



Our empirical study combines quantitative and qualitative approaches. Firstly, the survey aims to explore farmers' collaboration and networks as well as various sustainability issues associated with the farms. The survey was administered with a mailed questionnaire. Within the 3,557 farms, a systematic random sampling was applied picking every third element. Based on the response rate of 45 %, the final sample is considered a representative sample. Secondly, we conducted a qualitative case study including interviews with major stakeholders. In-depth interviews were made with twenty-seven farmers, eight representatives of food industry, eleven managers from local retails, and fifteen rural development managers working with local food projects (Figure 2). The results of the qualitative study are based on thematic analysis which means identifying, firstly, the basic themes and organising themes in stories on local food, and, secondly, finding patterns of living and thinking. We use some direct quotes taken from the conversation data in order to illustrate the interpretations which have been made

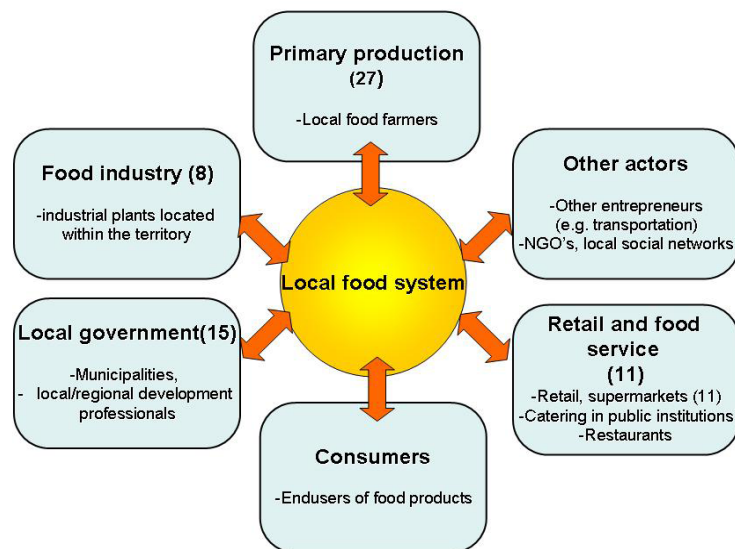


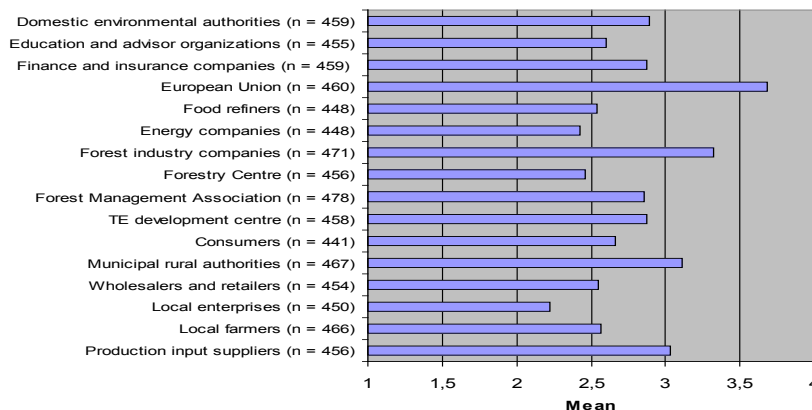
Figure 2. Local stakeholder map and the number of persons interviewed

## Community resilience and sub-regional incentives to local food production in central Finland

### Network activity in local food business

When Finland entered the common European agricultural market, the basic parameters of domestic food production changed immediately. The market prices of agricultural products fell on average by 40% of the 1994 level, which was followed by the pressures for farmers to expand and intensify their production (Niemi and Ahlstedt 2008). Our survey study (Figure 3) confirms that the actor, which the farmers consider the most influential in the economic sense, is the European Union. The forest companies, which in practice are inter-

national actors, rank the second. These results thus suggest that the strongest external pressures on farms are caused by actors, which are operating solely beyond the local and regional levels.



**Figure 3. The effect of various actors on the farms' economic success** (in means, 1 = no influence; 5 = extensive influence)

As a potential counter-force for the power of supra-local actors, there seems to be increasing interest for cooperation among and between the stakeholder groups of local food business. Our survey tells that 55% of the farmers have collaboration with other local farms or rural enterprises. What purposes do the active networks serve in local food business? According to our results, the farmers think that isolation is dangerous in the present food business.

*"Yes, obviously we need to network, since there are so many different branches to be mastered as part of the entire business. The rural entrepreneurship to-day requires diversity and versatile skills. One must lay hands on so many different tasks in so many sectors - actually quite distant from one another - starting from the calculations and accounting. Today you really need to have a modern office with the ICT facilities and all. And you have to master everything by yourself." (Interview, Farmer 15).*

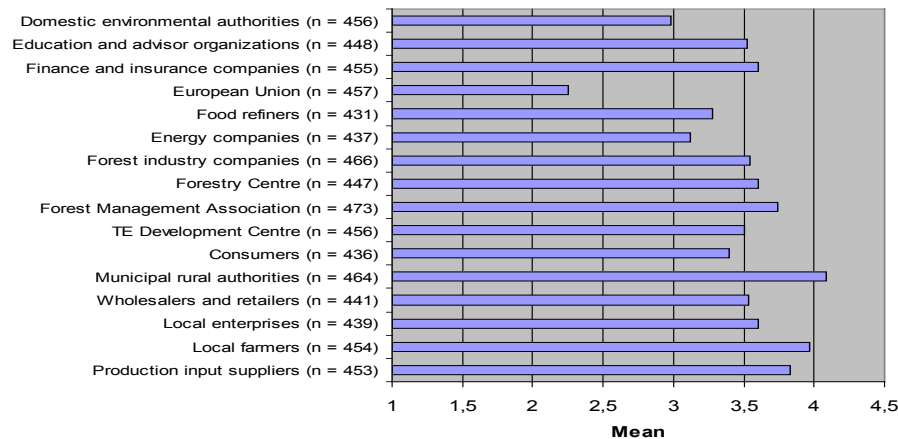
Farmers could surely be outsourcing some of these tasks. However, they seldom do since the basic cultural model of business is the Finnish family farm, where most tasks are taken care of. However, the farmers we interviewed give high priority to horizontal cooperation in order to secure steady delivery. The cooperation related to the small scaled business is actually the point where reciprocity comes in and community spirits starts to feature.

Also the other groups we interviewed favour cooperation among local food producers. Yet, the industrial stakeholders are somewhat sceptical towards local networking as they suppose that within the highly chained retail business decisions are, in practice, made in the capital region (i.e. Helsinki region). This will, it was argued, result in the standardised food supply over the whole country. The rural developers are more optimistic about the networking.



It was reminded, for instance, that if something goes wrong at individual farms, a cooperative or some other form of network can provide replacements for the supply shortages on a temporary basis.

Cooperation implies trust which can be seen as an essential element constructing local social capital. The survey study shows that the actors, which the farmers regard as the most trustworthy, are local by nature: the municipal rural authorities are ranked the first and the local farmers the second (Figure 4). On the other hand, the actors considered the least trustworthy are national/supra-national such as the EU, the domestic environmental authorities, and the energy companies.



**Figure 4. Trustworthiness of various stakeholders perceived by the farmers** (means, 1 = very untrustworthy; 5 = very trustworthy)

### Social capital and trust is embedded into local activities

The out-migration, depopulation, and closing of small farms in recent decades have resulted in the isolation of Finnish farms. They have also contributed to the considerable break in the tradition of reciprocal help, which actually was quite common still after the WWII. To what extent can the recent forms of horizontal and vertical cooperation be regarded as entirely novel social patterns? Alternatively, do we simply recognize some traditional form of reciprocity coming back? According to our survey study, mechanical contracting and farm work are the most typical forms of collaboration followed by the joint ownership of machines. The cooperation usually starts from the actual need for external resources following the economic situation of the farm. Thus, the main motivation for collaboration seems to be related to economic factors such as cost savings. However, also the convenience of collaborative work and the social benefits seem to be motivating to the cooperation.

On the basis of the in-depth interviews, we can observe that the dominant form of cooperation is still a single farm linkage with both upstream and downstream links indispensable for the main business. There are cases of the most

traditional cooperation with the confirmed experience of mutual trust mainly looking at the upstream supply chain.

*"We have cooperated for decades with a hatchery delivering fish fry. And now they have started all this fuss about networks... And we have also other similar long-term business partners throughout the country delivering different products. We have always worked together with them but any signed agreements have never been made. The way we do is almost automatic, say, with the fishermen delivering vendace." (Interview, Farmer 4)*

The downstream examples seem to entail also more complex, more institutionalized and more technology mediated patterns of cooperation: there the trust is by no means 'automatic'. For the farmer, there is a double challenge when she or he tries to secure the path downstream to the retail business and even to local food industry. One part of the challenge is to provide the right kind of supply just on time in order to secure the deal with a single buyer. The other is to simultaneously try to standardise the supply and to make it ready to be codified for sale, in principle, to any buyer at the national level. Thus, the trust is mediated through fixed codes, which essentially transform the professional work of the food supplier.

*"If you want to make sure that your products meet the requirement of competition with the mass production, you need to have very nice labels, an EAN-code and an effective quality check mechanism. Nothing else would do." (Interview, Farmer 6)*

Food security control appears, somewhat surprisingly, an ambivalent issue. Several farmers consider it overwhelming, but the picture is changing when attention is paid to other stakeholders. The retailers see health security control as one of the main reasons why the Finns indeed prioritize domestic food against imported food. In other words, the retailers basically reduce the issue of trust to consumer perceptions.

*"Indeed, Finland is a very patronizing society. Therefore, the check system of health impacts and other similar procedures are driven to extremes with the consequence that the customers and people in general become manic in their demand for domestic meat. All other food is perceived as inferior." (Interview, Retailer 2)*

In the upstream supply chain, trust still seems to entail many of the old day characteristics including traditional social reciprocity. Instead, when going downstream, farmers actually encounter another kind of food system, where the old elements of trust lose their value and are replaced by technically organized systems. Thus, the globalising economic system makes the place of the small entrepreneur unclear.

Overall, the situation of local farmers is characterized by two potential stalemates of the food system. Firstly, the horizontal networks among farmers are a relatively big challenge as the cooperation at community level has once been deteriorated.

Both the farmers and other stakeholders have some doubts on the impact of horizontal networking as the food system is increasingly globalized and standardized. Yet, according to our survey, there seems to be no single major barrier to local collaboration. As expected, the lack of potential partners is a common barrier since the number of active farms has decreased. Also the farmers' attitudes to collaboration and the desire for independency can be seen as minor obstacles to local cooperation. The results actually suggest that the farmers' networks are driven more by survival strategies focusing on production methods and less by competitive strategies focusing on markets. This is simply because cutting costs is prioritized against value adding activities. Secondly, it is not clear how the access to the entire supply chain could be guaranteed to the producers of local food. This issue is particularly related to the different socio-economic and socio-cultural logics of action prevailing at the different stages of the supply chain.

### Strengthening resilience through local initiatives

In improving the sustainable rural livelihood, farmers are obviously the key actors. It can be presumed that without their initiatives, the rural landscape and community would not be conserved and prospered.

*"Indeed, the countryside will be deserted if we don't do something of this type ... If you really want to live here, you should start something yourself. Most new initiatives are related to food production. Or something you can do with your own hands. Certainly, it is the lifeblood of rural area that we take such action here..." (Interview, Farmer 10).*

**Table 1. Farmers' perceptions on opportunities and threats to farming**  
(5= very promising opportunity; 1 = very serious threat)

	N	Mean	Median	S.D.
Increasing interest on local food	457	3,9	4	0,763
Increasing share of renewable energy	455	3,8	4	0,780
Discussion on food safety	459	3,5	3	0,926
Increasing consumer pressure	457	3,2	3	0,865
Agricultural loading on water systems	458	2,8	3	0,825
Opening up of new markets	448	2,8	3	0,914
Climate change	464	2,6	3	1,015
Increasing amount of waste	465	2,5	3	0,794
Increasing control	468	2,5	3	0,914
GMO Food	467	2,4	2	0,981
Stricter environmental legislation	467	2,4	2	0,982
Increasing requirements for reporting	457	2,3	2	0,865
Consumers' low agricultural knowledge	460	2,2	2	0,910
Food chains controlled by big retailers	450	2,2	2	0,803
Monopoly of energy markets	451	2,1	2	0,797

As comes to novel business ideas, local food is clearly recognized by the farmers. Table 1 shows that in our survey study the increasing interest on local food was perceived as the strongest opportunity for the farms. It was followed

by the increasing share of renewable energy. On the other hand, ‘monopoly of energy markets’ and ‘food chains controlled by big retailers’ were seen as the worst threats for farms. Thus, the farmers tend to recognize the opportunities at local level but feel themselves threatened by national and supranational actors. It also seems that the external pressure through market forces is considered even a stronger threat than the pressure through the command and control policies.

Thus, the rural space as the site of farmers’ own initiatives is of crucial importance. Local farmers seem to be rather confident if only the bottlenecks of the downstream food chain (foremost a more flexible delivery) can be solved. However, there are even more perplexing aspects which are related to multilevel governance and to the control of the small scale refining on farms. From the farmer’s view point, public policy does not encourage business initiatives for the local refining of farm products. One interviewee refers to European experience and claims that only some exceptions have successfully initiated a similar rural brand product in Central Finland as the local cheese made on farm:

*“In Finland, this kind of entrepreneurship (small scale refinery on farm) results in entangling to overwhelming bureaucracy, and that is by no means easy... It has not been any priority among authorities to support this kind of activity. If public authorities could clarify the rules of the game and make the things less complicated, I’m sure that there would be more people entering this kind of business. And this, for sure, would empower rural areas. And it would also help to diversify the livelihood. In the long run, the advanced processing of food in small refineries may add a great deal to the local assets.” (Interview, Farmer15).*

It is often understood that the food processing enhances primarily the economic capacity at the farm level. However, the rural developers emphasised also other variegated beneficial impacts of the traditional crop cultivation including the increase in ecological and cultural resilience. Indeed, sustainable development is seen as a challenge of balancing many different aspects of human activities and the rural environment. The identification of a long term vision plays an important role in increasing the social resilience at the community level. Actually, we found some ‘visioning’ on this, yet not so much with the local food producers than with the other stakeholders. It is rather clear that the trajectory of a rural community towards enhanced sustainability and social resilience is based on a successful combination of private entrepreneurship and community assets. These assets refer to the local incentives and networks and to the support to local food processing and branding culture. Such a sub-regional structure of rural-urban transactions and transfer may be understood as the main focus of development. This brings back the idea of territory which was, interestingly, elaborated by one of the rural developers:

*“It is most important to keep the countryside inhabited. And this cannot be done without effective farms keeping the fields under cultivation. In fact, we need a network that would, in a sense, feed a local main farm. Imagine a big*

*farm at the centre and around it we would find small farms feeding this big one. This would have the benefit that all the farms did not need to grow bigger yielding a huge crop. Yet, there would be one single farm qualifying as the centre of local supply.” (Interview, Rural Development Professional 9)*

## Discussion

We have found that, despite the strong agricultural transition in Finland, the stakeholders have a rather strong conception that the countryside should follow an agricultural trajectory solving the current development problems. The territory is essential for local food production at individual farms but also for encouraging the networking and transaction within a specific area. Also the community as a social entity belongs to the notion of local sustainability. Yet it is rather unclear how the communities in Central Finland should get organised in order to encourage local food initiatives. The policy-makers have not taken any meaningful role in enhancing social resilience through local food initiatives, and for the local food producers the policies appear more like an element of control than a source of support and incentives. Yet, the rural developers should not be accused for the lack of visions on regional development. Another basic question is how, in practice, the food chain should be reorganised in order to encourage resilient rural development.

We conclude that in Central Finland the community resilience is advancing with slow steps of adaptation to external challenges and by aiming to overcome the internal rigidities of social organisation and the conventions of the food market. The adoption of new technologies in production and sales is an essential part of this agenda. Yet, there are several peculiar challenges in the Northern Model of local food system. The local stakeholders we interviewed underlined the low density of population, the difficult access to the market, and the lack of lucidity on profitable specialisation and branding.

Moreover, there seems to be a gap between the farmers’ reality and the public policy discourse on the community and local food conceptions. Therefore, it is difficult to specify the effective incentives for organizing the present sporadic initiatives on farms and at the community level. However, it is obvious that an improved communication and cooperation between stakeholders can clarify the local food conception and open the way to enhanced production and sustainable livelihood and, finally, to the improved community resilience.

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