

Contribution of short food supply chains to sustainability and health

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Abstract: Short Food Supply Chains (SFSCs) are increasingly taken into consideration by policy and decision makers. In the European funded research project FOODLINKS an analysis of 19 cases was carried out in order to provide evidences on the diversity of SFSCs as well as to assess their contribution and potential to sustainability and health. SFSCs are varied in nature and practice. They exist in a range of forms in both commercial and non-commercial settings. In this paper a pair comparison of six different types of SFSCs was made: a) two “Face to Face initiatives; b) two proximate more complex SFSCs and c) also two spatially extended SFSCs. Key issues of the analysis were: activities, actors, type of products, area and territory, health and sustainability aspects, growth potential and innovation. A special focus of the paper was on the contribution of SFSCs to health and sustainability.

Health & wellbeing: Some SFSCs have increased knowledge and concern about food amongst consumers and led to the adoption of healthier diets. The potential for healthier food in SFSCs is created by both formal measures (e.g. broad variety of fresh food, especially fruit and vegetables) and informal measures (communication to consumers), but cannot always be fully reached due to trade-offs with other characteristics.

Environmental: Many SFSCs have minimised the use of resources such as fossil fuel or packaging, and/or use of less polluting methods of production (e.g. organic farming). This of course may vary significantly between different Short Food Supply Chains.

Social: The direct relationship between producer(s) and consumer(s) has ensured fairness and trust in many SFSCs, more social inclusion of people. SFSCs also can contribute to revitalise local communities in multiple ways (e.g. working places, strengthening local networks).

Economic: SFSCs to which consumers are committed in a more long-term perspective have reduced economic uncertainties. They help to preserve small and medium farms. SFSCs increase or help re-circulate community income and create new jobs; however the degree and relevance might strongly differ between SFSCs.

We can conclude that the degree of sustainability varies among different types of SFSCs, their products, locations etc. Also various participants in SFSCs may interpret sustainability differently and experience different impacts. Short food supply chains (SFSCs) can act as a driver of change and a method to increase sustainability, trust, equality and growth in agricultural, food, business, social, health and rural policy areas. Therefore they are of growing interest to policy makers.

Keywords: Short food supply chains, sustainability, environment, social benefits, economic performance, health

Short Food Supply Chains

Introduction

Short Food Supply Chains (SFSCs) have established in parallel to conventional food chains, playing a key role in the emerging food networks that are continuously arising as an alternative to the globalized agri-food model. SFSCs can represent traditional and/or alternative ways of producing, distributing, retailing, and buying food and they have served as niches for those food system actors, mostly producers and consumers, who look for alternatives to the dominating agro-industrial model. Short Food Supply Chains (SFSCs) are increasingly taken into consideration by policy and decision makers in government, industry and civil society organizations (Foodlinks 2013a).

What do we understand by Short Food Supply Chains? It is a common specific characteristic of SFSCs that they are highly value-laden and meaningful for their participants. The actual meaning of SFSC differs across various social groups, institutional settings and regional contexts. It involves certain characteristics of SFSCs and values associated to them.

Marsden et al (2000) use the concept of SFSCs as an “umbrella” term, and propose that SFSCs should show four defining characteristics, in order to go beyond the conventional and classical definitions of short food chain and, in particular the issue of distance definition: 1. the capacity to re-socialize or re-spatialize food, thereby allowing consumers to make value-judgements about the relative desirability of foods on the basis of their own knowledge, culture, experience or perceived images. 2. The redefinition of the relationships between producer and consumers showing clear signals as to the origin of food. 3. The development of new relationships for new types of supply and demand with new criteria that link price with quality criteria and the construction of quality (enhancing the image of the farm and the territory as a source of quality foods). 4. Emphasis on the relationship between food producer and consumer to construct value and meaning, rather than solely the type of product itself.

In this paper the focus is on characteristics and the diversity of typical SFSCs, which go beyond geographical nearness and no or limited number of intermediaries between producers and consumers. Particular emphasis is on the contribution of SFSCs to sustainability and health and less on the social relationship between consumers and producers.

Analysis of Short Food Supply chains in FOODLINKS PROJECT

In a European funded research project FOODLINKS the Community of Practice on Short Food Supply Chains, established within the project²³⁴ has compared and analysed 19 cases of SFSCs (Foodlinks, 2013a). Key issues of the analysis were: activities, actors, type of products, area and territory, health and sustainability aspects, growth potential and innovation. One key question in FOODLINKS project was to provide evidence on the diversity of SFSCS and to assess the poten-

²³⁴ See link: <http://www.foodlinkscommunity.net/1131.html?&L=0> (accessed on 31.1.2014)

tial of SFSCs to sustainability, health and well-being. The aim was to make recommendations for different actors to use SFSCs as policy tool.

SFSCs are very varied in nature and practice and exist all over the world in a wide variety of forms in both commercial and non-commercial settings. Examples of SFSCs include mainly three different categories: A) “Face to Face” initiatives, but as well B) “proximate extended” that means more complex SFSCs and C) also “spatially extended“ SFSCs, following a definition by Renting at al. (2003), which will be explained below per category described.

In this paper a selection of three different pairs of SFSCs were chosen, which were typical for others in the respective category.

Analysis of Face-to-face Short Food Supply chains

Face-to-face SFSCs are initiatives in which a consumer purchases a product directly from the producer/processor on a face-to-face basis and authenticity and trust are mediated through personal interaction (e.g. on-farm sales, farm shops, farmers’ markets). As the majority of SFSCs case studies observed belong to “Face to Face” cases, the two cases described in Tab. 1 - a collective farm shop in France (Brin d’Herbe) and a large box scheme in Italy (Zolle) - are of special interest because a larger number of farms were involved in these initiatives.

Table 1: Comparison of two Face to Face cases of SFSCs.

	Brin d’Herbe, France	Zolle, Italy
Type	Collective Farm shop of a farmer group on one farm	Large box scheme from large group of farms
Activities	Direct selling of food products to consumers	Distribution by a mix of vans and bicycles to consumers
Funding year	1992	2009
No. of Actors	Involvement of 20 farmers (selling between 10-90 % of their products) Customers: 1000 consumers/ week Staff: 4 full-time jobs Additional 50 associated farms	Involvement of 90 family farms of which 80 in the Lazio Region (good coordination) Staff: 18 people (2 leading persons), Customers: 1000 consumers
Type of products	Meat, milk, vegetables, fruits, eggs, cereals	Vegetables, fruits, meat, eggs, milk, cheese, bread, cereals, olive oil, vinegar, jams, non-food
Area and Territory	In the periphery of a larger town (Rennes): ca. 20-50 km	Rome – Lazio region Ca. 150 km (few farms South Italy)
What is meant by short?	Direct from farmer to consumers (at least one farmer usually present in the shop) Short physical distance	Direct delivery to consumers of mostly regional products (contact to producer through web and direct)
Health and food quality	Freshness (good access to broad variety, particular vegetables and fruits).	Freshness (broad variety) Good taste
Sustainability aspects	Local food, (little food miles) Majority organic farms (ca. 66 %)	Local, seasonal (less food miles) Organic and non-organic farms Fair price for producers
Growth and development	No further growth with new farms although potential (complexity would be too big)	Further growth might be possible
Innovative elements	Products belong to the individual farmers until they are sold (lower VAT) New: external sustainability assessment of farms with consumer involvement of farms	Consumer comes to know the identity of producer through box received, website, Facebook) Micro-distribution by bicycles - vans main delivery

There is potential for growth, but this is not considered a viable option by the group running the collective farm shop mainly for social reasons (20 farmers = good size to cooperate, fear of too high complexity), while for the Zolle box scheme this is not *excluded a priori*. The Zolle initia-

tive tries to strengthen virtual proximity with customers mainly through the Internet, where in the case of Brin d'Herbe the proximity to consumer is physical and takes place in the shop.

Analysis of proximate extended Short Food Supply Chains

Proximate SFSCs are initiatives, which extend reach beyond direct interaction and are essentially delivering products which are produced and retailed within the specific region (or place) of production. Consumers are made aware of the 'local' nature of the product at retail level (e.g. consumers' cooperatives, Community Supported Agriculture, box schemes).

Tab. 2 describes two proximate extended SFSCs where products are not only sold directly to consumers but also via other channels with only one intermediate step.

Table 2: Comparison of two proximate extended SFSC. Source: Foodlinks, Evidence document, 2013a

	Bio Romeo, The Netherlands	Willem and Drees, The Netherlands
Type	Farmer initiative for direct postal delivery of potatoes and vegetables	Company delivering local food to supermarket chain
Activities	On-line sale with direct delivery by post or pick-up at farm Sold also to restaurants, local shops and on farm	Direct delivery of local foods directly in Jumbo supermarket (180 locations)
Funding year	2012	2009
No. of Actors	8 farmers	Products from 100 farmers 14 staff members,
Type of products	Potatoes and vegetables	Fresh fruits and vegetables
Area and Territory	North East Polder, 250 km radius	Middle and southern part of the Netherlands but local, also depends availability of products.
What is meant by short?	Direct delivery to consumer and some local restaurants & shops (through Internet) Reducing social distance through Internet (main information on farms)	Local food for local distribution Ca. 40 kilometres from supermarket, Reducing social distance through Internet (main information: storytelling about farmers)
Health and food quality	Fresh (although not always possible) Different varieties	Fresh (broad variety, also vegetables) Seasonal
Sustainability aspects	Local All farms organic Transport by post instead of individual delivery Waste reduction: 10% goes to food banks	Local Small share organic food (until now one farm)
Growth and development	Further growth remains unclear (distribution costs as challenge) Potential: one social care farm Potential in public procurement	Still growing (Challenge: Selection of the right farmers, new distribution system) Promotion events important (story telling for consumers)
Innovative aspects	Collaboration with purchasing group (to widen assortment) Event "Harvest your own potatoes" on one farm to connect consumers to food	Alternative distribution system (Cross-docking with no storage in between) Central collection from small farmers

Both initiatives are in a phase where collaboration with partners as well as innovative solutions is necessary to reduce high collection and distribution costs. Social distance between producers and farmers is reduced through Internet.

Analysis more spatially extended Short Food Supply Chains

Spatially extended SFSCs are initiatives, where value and meaning laden information about the place of production and producers is transferred to consumers who are outside the region of production itself and who may have no personal experience of that region (e.g. certification labels, restaurants, public food procurement to catering services for institutions).

In Tab. 3 two more spatially extended SFSCs delivering to canteens & restaurants are compared: the farmer cooperative Oregional in the Netherlands and the company Pico Bio in Switzerland.

Table 3: Comparison of two more spatially extended SFSCs delivering to canteens & restaurants. Source: Foodlinks, Evidence document, 2013a

	Oregional The Netherlands	Pico Bio, Switzerland
Type	Farmer cooperative making direct sales to canteens and restaurants	Specialised small wholesaler delivering regional products to canteens and restaurants
Activities	Delivery to kitchens Webshop	Daily delivery of products with own vans to kitchens, Collection of products directly from regional farms
Funding year	2009	2000
No. of Actors	22 farmers 5 staff Cooperation with care 4 care institutes, Customers: 9 restaurants and shops,	60 farmers delivering 16 staff Ca. 70 restaurants and canteens and organic shops as customers
Type of products	Dairy products, meat, fruit, vegetables, eggs	5000 products: mainly vegetables, fruits, milk products, partly meat
Area and Territory	50 km radius (near 2 towns)	Zürich agglomeration Distribution radius: 60 km Supply: 20-150 km,
What is meant by short?	Regional food (not local) Slogan: know your farmer know your food	Not necessarily local but regional, preferably from small farmer groups (from more distance) to restaurants or shops Social nearness to farmers important
Health (food quality)	Fresh Good taste	Fresh
Sustainability	Seasonal (less food miles) Less meat Not organic Fair price (+ 15 %)	Seasonal 98 % organic Fair prices (for producers and customers)
Growth and development	Support by INTEREG project in the starting phase Strong further growth in 2010-2013 Challenge: farmers not prepared for highly customized products	No further growth but more services Initiator: still key person (former organic farmer) Challenge: high collection and distribution costs and investment in new storage centre
Innovative aspects	Important to train cooks. Cost savings for care institutes (other menus, less waste) Information about origin given to hospital patients	New cooperation with other caterers and Community Supported Agriculture nearby Financial support for investment through loans from farmers and customers but not from banks External sustainability assessment with FAO-SAFA system

The above described SFSCs delivering to canteens and restaurants try to keep a close contact to their regional farms, either by collaborating through a farmer cooperative like Oregional or through a special financial engagement of farmers and customers in the case of Pico Bio.

Sustainability analysis of Short Food Supply chains

On the basis of 19 case studies of SFCS and a literature research the authors looked at the benefits of SFSCs for health and sustainability. The analysis made in the FOODLINKS project is documented in an “evidence document on Short Food Supply Chains as drivers for sustainable development” (Foodlinks 2013a). It has been summarised in a policy brief leaflet (Foodlinks, 2013).

Health, food quality & wellbeing: Some SFSCs have increased knowledge and concern about food amongst consumers and led to the adoption of healthier diets particularly with regard to bet-

ter access to a wide variety of fruit and vegetables in a range of social groups but especially school children. However, in some cases SFSCs may not lead to healthier diets due to limitations in the supply of a varied range of foods. The potential for healthier food in SFSC is created by both formal and informal measures (e.g. higher share of fresh and affordable vegetables), but cannot always be fully reached due to trade-offs that need to be made with other characteristics (e.g. out of season: reduced assortment or products from more distance).

With regard to food quality, most of the SFSCs described here focus on fresh and seasonal food and try also to supply food which is very tasty. Several SFSCs (like Oregional or Pico Bio) promote the use of a broad range of varieties, including old varieties like old potatoes or tomatoes, which are perceived by consumers as cultural diversity and factor of well-being.

Environmental sustainability: Many SFSCs have minimised the use of resources such as fossil fuel or packaging, and/or adopt less polluting methods of production (e.g. by practicing organic farming). This of course may vary significantly between different SFSCs. Many SFSCs reduce food miles by delivering directly or by establishing a farm shop. But how energy efficient this is, depends very much on the quantities consumers buy and/or are transported. In some cases the transport of large quantities from big farms might be more energy-efficient, but several SFSCs (like Pico Bio) favour the contact with small family farms (even if the transport distances are longer) for social reasons, in order to maintain rural communities and employment in remote areas. Some SFSCs try to optimise the collection and distribution costs for financial reason, but at the same time also reduce the use of non-renewable fossil energy (e.g. like Zolle, Bio-Romeo, Willem and Drees or Pico Bio).

Social sustainability: The direct relationship between producer(s) and consumer(s) has ensured fairness and trust in many SFSCs. In particular Community Supported Agriculture (CSAs) is important for the social inclusion of people. SFSCs can also contribute to revitalise local communities in multiple ways. Several SFSCs have explicit social goals, like social farming with handicapped people (in the case of Bio Romeo). Several SFSCs also use Internet to create a closer relationship with the customer, supported by the organization of on-farm events (like Brin d'Herbe, Willem and Drees). In some cases, the trust of farmers and customers in a company can help to carry out higher investments when banks are not willing to give money (as in the case of Pico Bio).

Economic sustainability: SFSCs to which consumers are committed in the long term have reduced economic uncertainty deriving from unstable production and sales volumes. They help to preserve small and medium farms which are at the core of local rural economies. SFSCs increase or help re-circulate community income and create new jobs; however the degree and relevance might strongly differ among SFSCs. Fair prices are also an explicit goal of several SFSCs (like Zolle, Oregional and Pico Bio).

Conclusions

On the basis of our analysis we can conclude that the degree of sustainability varies among different types of SFSCs, their products, locations etc. Also various participants in SFSCs may interpret sustainability differently and experience different impacts (Foodlinks, 2013b).

However, short food supply chains (SFSCs) can act as a driver of change and a method to increase sustainability, trust, equality and growth in agriculture, food, business, social, health and rural policy areas. Therefore they are of growing interest to policy makers, although a definition cannot be made generally. Such a definition must necessarily be developed with regard to the specific local and socio-cultural context.

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