



Strategic Guide

Short Food Supply Chains (SFSCs)



Content

Welcome

There is growing interest in more direct means of food distribution and consumption, as well as the emergence of innovative and alternative models that change the way food is retailed and purchased. These diverse models of direct distribution are known as Short Food Supply Chains (SFSCs) which are gaining increasing attention across Europe in response to the challenges faced by conventional long food chains, both in rural and urban areas.

A commonly shared view of SFSCs is that they may strengthen farmers' position in the value chain and tackle unfair trading practices, whilst providing greater added value, contributing to local economic development, and operating in a more socially and environmentally responsible way. For many consumers, SFSCs represent a means to access high quality, fresh, locally sourced produce, as well as a way of contributing to the social life of local communities. These SFSCs have the potential to stimulate consumers' interest in the value and origins of food, as well as strengthen social relations.

SFSCs have gained political attention in recent years with EU rural development and food policies emphasising that SFSCs can generate economic, social, and environmental benefits that contribute to sustainability. However, scientific evidence on the economic, social, and environmental impacts of various types of SFSCs has been, until recently, mixed and scattered, lacking a comprehensive and holistic assessment. The European Union Horizon 2020 project 'Strength2Food' sought to fill this gap, undertaking an in-depth, empirical evaluation of the economic, social, and environmental sustainability of SFSCs, based on both quantitative and qualitative analysis.

To help practitioners achieve tangible benefits and move toward more sustainable strategies, this guide provides evidence-based insights on good practices and recommendations to strengthen SFSCs according to the three pillars of sustainability. This guide is specifically aimed at practitioners who are working with the sale and distribution of food in SFSCs, as well as policy makers and public authorities shaping the institutional framework for these initiatives. It focuses on two main questions: (i) to what extent, and in what ways, do SFSCs contribute to sustainability? (ii) how can practitioners and policy makers strengthen the sustainability of SFSCs? Addressing these questions through our research-informed insights provides an opportunity to reflect on the potential of SFSCs and learn from existing good practices.

List of abbreviations and acronyms	4
Defining Short Food Supply Chains (SFSCs)	6 - 7
Research in detail: data and methods	6 - 7
Economic, social, and environmental sustainability of SFSCs	8 - 9
Economic sustainability	8 - 9
Social sustainability	8 - 9
Environmental sustainability	8 - 9
The Economic Pillar: Good practices for sustainable SFSCs	10 - 11
Capture economies of scale and scope through co-operation	12 - 13
Undertake customer segmentation and targeting	14 - 15
The Social Pillar: Good practices for sustainable SFSCs	16 - 17
Foster solidarity via producer-consumer co-operation	18 - 19
Strengthen communication and awareness about food	20 - 22
Enhance collaborative innovation and digital platforms	23
Encourage networking and opportunities for enduring relationships	24 - 27
The Environmental Pillar: Good practices for sustainable SFSCs	28 - 29
Minimize environmental footprint through co-ordinated logistics and efficient distribution	28- 29
Recommendations	30 - 31
References	32
Acknowledgements	33

List of abbreviations and acronyms

AMAP	Association pour le Maintien d'une Agriculture Paysane
B2C	Business to consumers
CO₂	Carbon dioxide
CSA	Community Supported Agriculture
DES	District of Solidarity Economy
EU	European Union
GAS	Gruppo d'acquisto solidale
HORECA	Hotels, Restaurants, Catering
LFSC	Long Food Supply Chain
NFU	National Farmers Union
PDO	Protected Designation of Origin
PGI	Protected Geographical indication
SFSC	Short Food Supply Chain



Fostering the sustainability of short food supply chains

Defining short food supply chains

The Regulation (EU) N. 1305/2013 of the European Parliament and of The Council, (1305/2013) defines a 'short food supply chain' as "a supply chain that has a limited number of economic operators, committed to co-operation, local economic development, and close geographical and social relations between producers, processors and consumers" (European Communities, 2013). Key features distinguishing Short Food Supply Chains (SFSCs) from more complex and "long" food supply chains are the types of relationships that link the farmer / fisher (primary producer) to the consumer (end-user). These can be expressed by three "proximity" dimensions (Malak-Rawlikowska et. al, 2019a):

- **Geographical proximity:** the physical distance travelled by a product from the place of production to the final consumer;
- **Social proximity:** the social closeness between the producer and consumer and the degree of mutual trust associated with the exchange;
- **Organizational proximity:** expressed by the number of intermediaries between the primary producer and end-user. For SFSCs, this typically equates to a maximum of one intermediary.

SFSCs cover a wide range of different production-distribution-consumption initiatives, whose governance and organizational structures significantly differ from more conventional food supply chains. While conventional food chains still exert a retail dominance in most countries, numerous initiatives are growing niche markets and developing innovative products, or services, recognising customer needs and business opportunities.

Research in detail: data and methods

In the context of the Strength2Food project, we conducted a quantitative sustainability assessment focussing on the distribution stage, related to the physical movement of products from the farm (producer) to the end consumer. Specifically, 10 types of distribution channels (6 short and 4 long market chains) were identified (Table 1). The research, conducted across seven countries (France, Hungary, Italy, Norway, Poland, United Kingdom and Vietnam), carried out business surveys to estimate a set of economic, social and environmental indicators, comprising 12 product chains (2 per country) - for a total of 486 market chains. This exercise uncovered a complex picture, in which producers participate, simultaneously, in multiple market channels, including both short and longer food chains, denoting a 'hybridity' in market participation.

This quantitative assessment was combined with a qualitative evaluation of SFSCs, where we looked at specific case studies within the six European countries involved in the study. We conducted in-depth interviews with key actors (producers, market managers/retailers, consumers), and undertook customer surveys. From this multi-method approach, we gathered insights related to an array of case studies capturing the diversity of SFSCs. These included, amongst others, traditional farmers' markets and local retail outlets, as well as innovative initiatives such as producer-consumer co-operatives and box scheme deliveries to consumers, both in the agricultural and seafood sectors. Here we present some of these case studies, to highlight good practices and draw recommendations.



Table 1. Typology of short and long food supply chains

Short food supply chains (SFSCs)	Long food supply chains (LFSCs)
Direct on-farm sales: pick your own	
Direct on-farm sales: sales to individual consumers	On-farm sales to intermediaries
Sales to small retail outlets: one intermediary	Sales to wholesalers or on wholesale markets
Direct off-farm sales: internet deliveries	Sales to retail chain (2 intermediaries)
Direct off-farm sales: delivery to consumer	Sales for processing
Direct off-farm sales: farmers' markets (or food fairs)	

Source: Malak-Rawlikowska et al. (2019b)

Economic, social, and environmental sustainability of SFSCs

Sustainability has three main dimensions: economic, social, and environmental.

A sustainable food supply chain is one that strives for managing economic, social, and environmental impacts for the delivery of products and services, securing long-term value for all involved stakeholders (Sisco et al., 2010).

Economic sustainability

This dimension concerns the competitiveness and viability of food chains and their actors, including primary producers, such as farmers and fishers. It relates to improved income opportunities for participants, and positive contributions to the local community in terms of value generation and job creation. Furthermore, economic sustainability implies that food of good quality is available at affordable prices for consumers.

Social sustainability

This dimension considers the well-being of all supply chain actors, including producers, consumers and retailers/market managers. A socially sustainable supply chain is based on trust and social capital, promoting cohesion and personal relations between producers and consumers, grounded in fairness, solidarity and shared values. It contributes to strengthening food-related competencies and skills, enhancing social networks and preserving cultural heritage and identity.

Environmental sustainability

This dimension is linked to the efficient management of natural resources for the long-term health of the ecosystem. Responsible food supply chains aim to reduce the carbon footprint of actors throughout the entire chain (from production to consumption) from such processes as transportation and waste management. Environmental sustainability also aims to improve or protect animal welfare, biodiversity, natural resources like soils and water as well as natural capital.

Strength2Food studied different types of SFSCs to identify key strengths and weaknesses, revealing successful market strategies and areas of intervention, from both a practitioner and policy perspective, which deliver economic, social and environmental benefits. The research aimed to test some of the commonly heard claims on the sustainability benefits of SFSCs, such as “short food supply chains are more sustainable than global food chains” and “local food is more sustainable and better for the environment”.

Figure 1. The three dimensions of sustainability



The Economic Pillar: Good practices for sustainable SFSCs

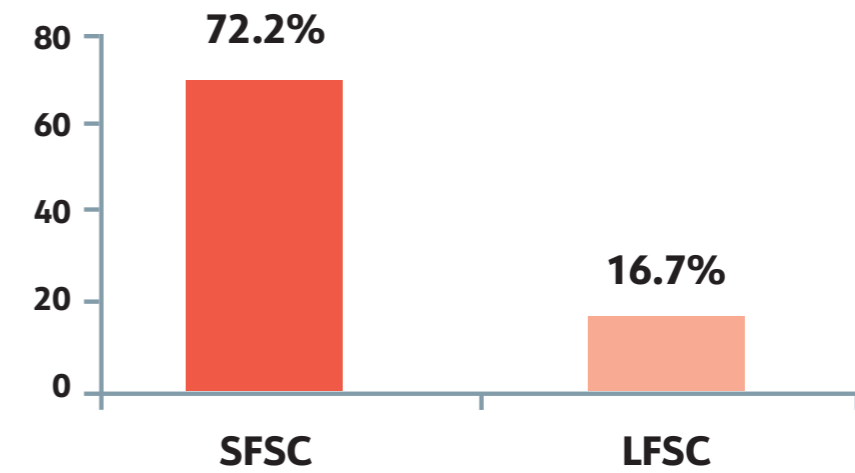
Strength2Food analysis showed that participation in SFSCs is economically beneficial for producers.

SFSCs allow a larger proportion of the added value to be captured by producers which would otherwise be shared out amongst different intermediaries. Engagement in SFSCs is also beneficial because some types of SFSCs increase producers' profit margins (e.g. thanks to direct sales to consumers) and facilitates the creation of market niches for high quality food. This finding holds true across all short distribution channels, product categories and countries under investigation.

On average, producers' participation in SFSCs resulted in much higher chain value added, (Figure 2). However, after deducting distribution costs, some market chains (e.g. sales on farmers' markets) become less attractive for some producers. This poses the question of whether farmers selling through SFSCs are adequately compensated for the time they invest in more laborious distribution. For many producers, a SFSC is the preferred option, but some disadvantages should be noted. These relate to either "economies of scale", namely economic disadvantages associated with small-scale production due to relatively low production volumes, and/or "economies of scope" which relate to the downsides of offering only a relatively limited range of products. Using case studies, we will illustrate practices that can help overcome these disadvantages.

Figure 2. Economic sustainability indicators for SFSCs and LFSCs

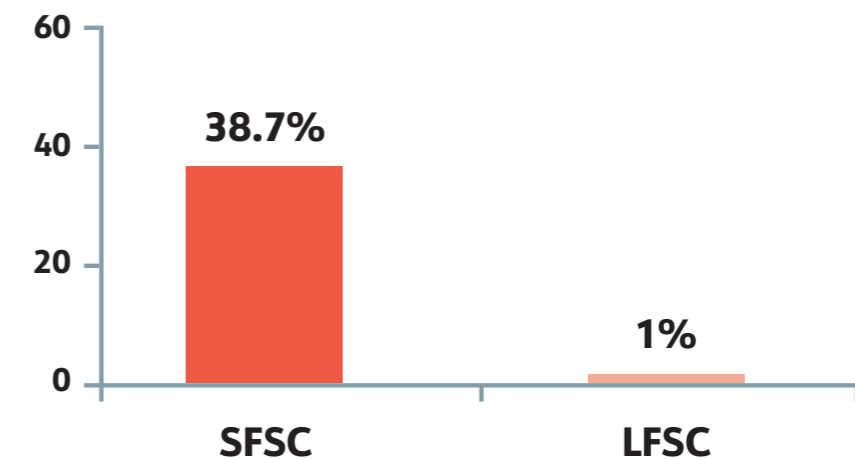
PRICE PREMIUM [%]



Price difference (Farm gate price in chain-farm gate price to when selling retail) (euro/kg)

Average farm gate to retail price in the region (euro/kg))

CHAIN VALUE ADDED [%]



(Chain value added (euro/kg)

Average farm gate to retail price in the region (euro/kg))

Distribution costs contain: costs of transportation, packaging, market fees and similar payments, as well as distribution related labour input. Costs of own labour were estimated at per hour rates paid to hired labour.

The Economic Pillar: Good practices for sustainable SFSCs

Capture economies of scale and scope through co-operation

Co-operation on a horizontal (between farmers) and vertical (with sub-suppliers and selected customers) level can help address the economic disadvantages connected to missing economies of scale and scope. Reaping economies of scale requires producing more of the same good and/or service to increase efficiency and thereby reduce average costs. Securing economies of scope implies producing a variety of different products and/or services to improve the utilization, and cost-effectiveness, of resources.

The creation of producer co-operatives can help some small-scale farmers. Within co-operatives, farmers can

co-invest and co-own expensive machinery to share fixed costs. They can also co-brand products and thereby share marketing costs to collectively strengthen their relative position in the supply chain. Small-scale farmers may further benefit from offering a wider variety of complementary goods and services in co-operation with other actors. The key challenge is to successfully combine and transform bundles of different resources into products and services that can appeal to specific market segments.

The positive impacts of co-operation in tackling the challenges of small-scale production are illustrated through two case studies: an Italian dairy co-operative and a farmers' market in France.

Dairy co-operative Latteria Sociale Garfagnolo, Appennino Tosco-Emiliano National Park, Italy

Economic sustainability

- Price premiums achieved via co-operation and value-added products
- Quality of products is perceived as higher than conventional products

Social sustainability

- Producer co-operation, co-ordination, and solidarity
- Local employment opportunities in agricultural production, processing, and retailing
- High customer satisfaction and quality appreciation

Environmental sustainability

- Preservation of natural resources, strengthened by the Protected Designation of Origin (PDO) label for Parmigiano Reggiano cheese
- Improved animal welfare (e.g. grazing cows in pastures and free stables)

The "Latteria Sociale Garfagnolo" is a dairy co-operative founded in 1947, located in the Appennino Tosco-Emiliano National Park. The co-operative, comprised of 23 dairy farms, produces approximately 10,000 wheels of PDO Parmigiano Reggiano cheese annually. This heterogeneous group of small-scale farmers

varies in operational capacity, but all require structural investment. The cheese produced by the cooperative is printed with four protective information labels: (i) the EU PDO logo (ii) the Parmigiano Reggiano Consortium brand (iii) the brand "Product of the Mountain" and (iv) the logo of the Appennino Tosco-Emiliano National Park. Their Parmigiano Reggiano PDO cheese is mainly marketed through wholesalers (60%) but 20-25% is sold through the co-operatives' small retail outlet. The retail outlet sells the Parmigiano Reggiano PDO "Product of the Mountain" cheese with various seasonings, alongside other dairy products (such as butter and ricotta) produced by the co-operative with the accompanying logo of the Appennino Tosco-Emiliano National Park. Moreover, the shop sells other local products from the territory (e.g., traditional Balsamic vinegar, locally produced pork, cakes, organic honey and chestnut flour).

Consumers' perceptions that the local products are of superior quality justifies their acceptance of higher prices, which covers the higher costs of production (e.g. using locally produced milk). Thus, selling the product through the small retail outlet facilitates the acceptance of a higher selling price, thereby achieving higher profit margins compared to the wholesale market.

Hauterives farmers' market, Drome, France

Economic sustainability

- Price premiums achieved via co-operation and value-added products
- Quality of products is perceived as higher than conventional products

Social sustainability

- Producer co-operation, co-ordination and solidarity
- Greater producer autonomy in price-setting and retail decision making
- Close connection, knowledge-exchange and trust between producers and consumers
- Social participation and civic engagement with the local community

Environmental sustainability

- Exclusively organic produce, often certified through the environmental and social brand Nature et Progrès

Hauterives farmers' market in Drome (France) is a prime example of how a small-scale group of farmers can co-operate to establish a local market and farmers' shop. It is in a village of 2,000 inhabitants. Gradually,

the informal organisation evolved from its two initial farmers to include three others, increasing the range of products offered. Today, the farmers are organised into a co-operative that manages the shop. In the beginning, the market took place outdoors on one of the farms on Saturday mornings, while now also opens on Wednesday afternoons in its own building (shop). In the shop, farmers sell dairy products, meats, fruits, vegetables, bread and flour. When not used for retailing, the shop is often used by local associations and civic groups, thus representing a place for gathering and enhancing local civic cohesion.

The market is very successful, and its growth benefits the farmers, but also the wider community. Its organic identity is important to farmers and customers, who are very committed to this means of production. The market gathers different types of products, offering convenience for customers, so the farmers mutually benefit from each other's presence. Co-operation for the establishment of their own shop has given the farmers more autonomy in how they market their goods as well as generating greater added value from their production.



The Economic Pillar: Good practices for sustainable SFSCs

Undertake customer segmentation and targeting

A deeper understanding of customers' willingness to pay is essential for small-scale producers selling via SFSCs. The choice of selling via a specific distribution channel is inextricably linked to the choice of a specific market segment to target. Which are the most valuable customer audiences and how to reach them as cost-efficiently as possible?

Multiple marketing channels may be adopted. First, farmers could brand their own farm and products as premium and sell these products in HORECA (Hotels, Restaurants, Catering). Such customers are typically willing to pay for premium quality products, although their demand can be erratic and sometimes risky, as the churn of business start-ups and deaths in this sector can be high. A further example consists in targeting tourists (local, national, or international) who seek authentic

local food combined with additional experiences that farms can offer. Other market segments, for instance young people and students, might prefer to buy cheaper traditional products in local markets.

Several low-cost measures can contribute towards meeting the expectations of this diverse pool of consumers. These include providing a good number of sales-stations at farmers' markets to secure an attractive mix of products, but also locating the market near other shops, to ensure consumers can find all the products they wish to buy within the same area. Additional measures include scheduling trading hours according to customer needs and local visitors (e.g. including evenings on weekdays, and weekends). A further approach may be implementing a services marketing strategy that emphasises the aesthetic and experiential dimensions of consumption, to attract younger customers - as illustrated in the case study below.

Increasing Young People's Engagement with Farmers' Markets in the UK

SFSCs often suffer from an ageing customer base. Research by Bianca Messina (2020) considered how to increase young people's engagement with farmers' markets in the UK. Working with a sample of UK university students, the study confirmed that students held very positive attitudes towards farmers' markets but rarely visit them. The main barriers are convenience and price. Conversely, the main appeal of farmers' markets is based on providing foods not available elsewhere, offering unexpected discoveries and alternative experiences.

To engage young people, farmers' markets should adopt a services marketing perspective embracing aesthetics, entertainment, education and escapism. Engagement with farmers' markets can be improved by holding them in more convenient locations for students (such as University campuses and transport hubs), integrated within wider events (e.g. shows, cooking demonstrations). Often farmers' markets

current offerings focus on families, with whole chickens and joints of meat, which are too expensive and offer excessive portions for young people. Trial sized, "pocket money" offerings provide lower risk for discovering new foods and appeal to students. For some interviewees, aesthetics and "Instagram ready" offerings matter. The social media presence of farmers' markets is currently often weak and fails to use the digital platforms frequented by young people. Consequently, young people often have very little knowledge regarding where and when markets occur. Improved digital presence is thus more important than ever.



The Social Pillar: Good practices for sustainable SFSCs

As part of Strength2Food, producers evaluated the attractiveness of different market chains.

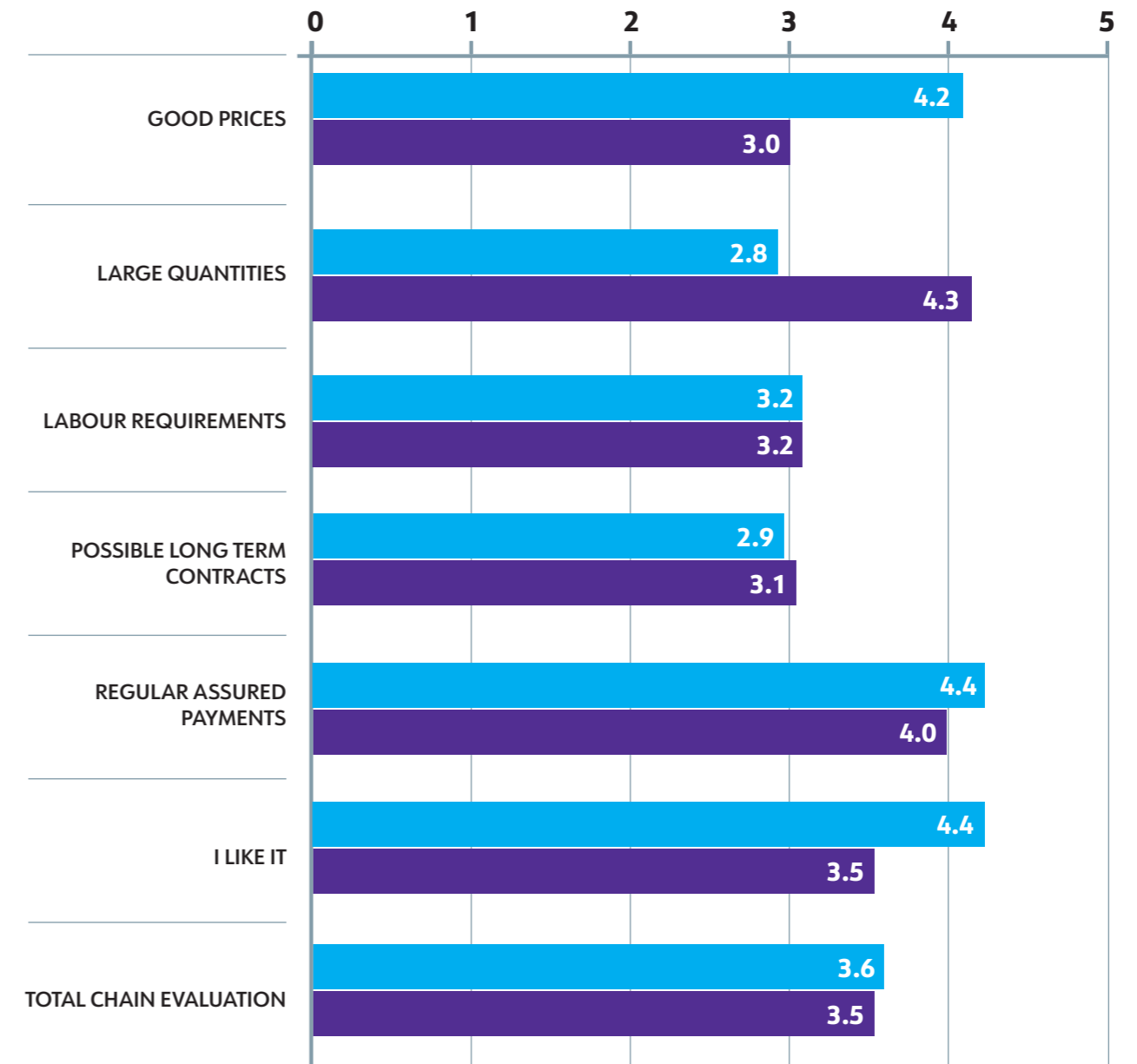
Producers positively evaluated participation in SFSCs regarding several factors, such as higher prices, regular and assured payments, and their general level of satisfaction. (see Figure 3).

However, SFSCs do not absorb large quantities of produce, nor are they able to ensure long-term contracts, making them less attractive compared to longer chains for these aforementioned reasons.

The research also highlighted important social advantages of SFSCs: increased bargaining power for producers (in other words, their ability to influence prices and selling conditions), a greater level of trust in other supply chain participants, and overall better social relations with other producers and consumers. Not surprisingly, these factors appeared most apparent in SFSC market channels where producers had a direct contact with consumers.

Producers also reported that SFSCs strengthen the possibilities for co-operation and building informal networks. Particularly, face-to-face contact with consumers facilitates two-way communication, sharing product knowledge and obtaining direct feedback from customers. Both producers and consumers enjoy the sociability of the markets and consumers reported increased knowledge and skills about food and food related practices. In a nutshell, participation in SFSCs creates closer ties between producers and consumers, which in turn strengthens social cohesion in the local community and regional identity. The good practices illustrated below are connected to the benefits of fostering solidarity, communication and collaboration between producers and consumers.

Figure 3. Chain evaluation based on producer perception: 'How attractive is this market chain?'



SFSC

LFSC

* LIKERT SCALE 0-5

0 = Very weak/poor
5 = Very good/strong

The Social Pillar: Good practices for sustainable SFSCs

Foster solidarity via producer-consumer co-operation

Strength2Food's case studies demonstrate that consumers' participation in SFSCs is motivated by a desire to support producers, especially in those initiatives with direct producer-consumer relations. Collaboration was emphasised in some of the most socially innovative initiatives, which operated beyond conventional market exchanges, with the aim of promoting fair conditions for both producers and consumers. This is the case of Community Supported

Agriculture (CSA), whereby producers and consumers share some of the risks of production. For instance, CSA members will pay up front for farm products, and in some cases may also volunteer to work on the farm, which will ultimately reduce the price for food paid by the consumer.

The French association AMAP (Association pour le Maintien d'une Agriculture Paysane), the Italian solidarity purchasing groups GAS (Gruppo d'acquisto solidale) and the Norwegian consumer co-operatives are all inspired by these same principles, as illustrated below.

Solidarity purchasing group: The District of Solidarity Economy (DES) in Parma, Italy

Economic sustainability

- Fair prices for farmers and consumers

Social sustainability

- Co-operation and co-ordinated efforts among producers in food procurement logistics
- Mutual trust and solidarity between producers and consumers
- Collaboration among several actors in the supply chain to enhance transparency

Environmental sustainability

- Organic farming practices

The District of Solidarity Economy (DES) in the territory of Parma (Italy) seeks to enhance and promote practices based on mutual trust and solidarity between community actors. The core idea of this network is the solidarity purchasing groups (Gruppi di Acquisto Solidale - GAS): a network of consumers co-operating to buy food directly from local producers or co-operative retailers at a price that is fair to both parties. GAS often organises themselves in groups of neighbouring families, who hold regular meetings to select farmers and producers, and organize the logistics for food procurement.

The aim of a GAS is to shorten the chain, lower prices for higher quality food, promote local products, protect workers' rights, reduce intermediation and environmental impacts whilst establishing a relationship of trust between producers and consumers. The GAS network enables responsible collaboration with farmers to maintain their economic viability, whilst also negotiating quality criteria and encouraging conversion to organic farming.

DES seeks to co-ordinate and implement activities, towards the creation of a solidarity economy by connecting 31 GAS and other cultural/voluntary citizen associations located in the province of Parma. Its activities include 'Mercatiamo': a weekly farmer's market organized and managed by the DES network. Aiming to promote and enhance the market for local and seasonal products within familiar places, the farmers in the Mercatiamo network are involved in a "participatory guarantee system", which is a self-certification system amongst small farmers. This system allows for a set of protocols to be agreed upon collaboratively, which is the preferred means of decision making for solidarity economy activists.



Consumer co-operative Oslo Kooperativ, Norway

Economic sustainability

- Price premiums for producers
- Consumer access to, and affordability of, organic, locally sourced food

Social sustainability

- Fair relations, transparency and trust between producers and consumers
- Participation in the co-operative, fostering a sense of community and belonging

Environmental sustainability

- Organic farming practices
- Increased consumer awareness about food production methods and sustainability
- Greater variety of foods consumed based on local varieties and seasonal food
- Minimal packaging

Oslo Kooperativ (Oslo Co-operative) distributes food products directly from producers to consumers within a local area. It is an example of how consumers can organize themselves in order to support local producers.

The co-operative started in 2013 and was the first alternative, consumer-driven co-operative organization in Norway. It was founded by a group of consumers who intended to create an alternative sales channel for local, organic and biodynamic vegetables.

The members of the co-operative can order bags of vegetables every other week, as well as bags with meat and dairy products once a month. The co-operative has two points for picking up pre-ordered bags, and the members assist other members in filling their bags at the pick-up locations. The co-operative has ten basic principles amongst which fair and direct trade is central. The organization has a low-budget structure and it does not seek profit, rather it strives to strip out the costs of intermediaries as much as possible, so that organic and biodynamic farmers earn more from the sale of their products. By cutting out intermediaries, co-operative members benefit from more affordable prices for organic, locally sourced food. Another main aim of this initiative is to lower the environmental impact of production, by reducing transport, packaging, and food waste. As in the case above, the co-operative is grounded in a collective sense of community and belonging.



The Social Pillar: Good practices for sustainable SFSCs

Community-supported agriculture: Association pour le Maintien d'une Agriculture Paysane (AMAP), France

Economic sustainability

- Price premiums for producers
- Economic risks shared between producers and consumers

Social sustainability

- Trust-based relationships among producers and between producers and consumers
- Co-operation between producers in food procurement logistics

Environmental sustainability

- Reduced emissions from efficient transport logistics
- Minimal packaging

"AMAP" ("Association pour le Maintien d'une Agriculture Paysane" translates to the "Association to Foster Small Scale Agriculture") which is a supply system inspired by the "Community-Supported Agriculture" (CSA) concept. As an organised box scheme, consumers pay a fee and producers supply subscribers with a weekly seasonal box for a fixed period. In most AMAPs only one type of box is available (mostly vegetables and usually organic), but sometimes extra food (generally meat or cheese) is available for purchase. Deliveries are made

to an association, a library, school or similar distribution point. Consumers voluntarily help with distribution (e.g. unloading the truck or arranging deliveries of vegetables by farmers) therefore reducing the need for intermediaries between farmers and consumers.

"Alterconso" is another small-scale co-operative in Lyon, France, supplying 700 families with weekly delivered, locally produced food to facilitate organic, small-scale production. The chain has one intermediary, with eight people employed in the co-operative, and products provided by roughly 40 producers. Alterconso subscribers receive a box of fruits, vegetables, bread, dairy products and snacks (herbal tea, local cakes...) in different sizes (small, medium, big) with the contents of the box varying each time. Alterconso is bigger than most AMAPs: distributing through 13 delivery points in Lyon where consumers collect their boxes. Although described as a "box", consumers bring their own bags and collect products from different crates in quantities according to the delivery list with only fragile foods (e.g. strawberries or meats) packaged.

Three delivery systems are used:

- Farmers deliver their products to the co-operative's base;
- Farmers meet the co-operative's truck in the countryside to transfer products;
- The co-operative collects products from the farm.

This knowledge exchange can be enhanced further in the context of organized and planned activities within SFSCs. Several cases specifically sought to enhance customers' knowledge and skills. Box schemes provide extensive information about the products, together with recipes based on their ingredients. Marketing through social media and web pages present further opportunities for communication and educational activities. These activities took the form of food tastings, cooking workshops, as well as educational exhibitions about sustainable practices, as illustrated here by the cases of Bio-Bazar farmers' market in Poland and the Creel Fish Club box scheme in England.

Strengthen communication and awareness about food

A key finding from Strength2Food's research is that producers' first-hand knowledge of products and direct communication with consumers represents a strategic marketing tool. We found that consumers particularly value close contact with producers, especially when this enables information sharing on the products, their quality aspects and preparation processes. In the case of seafood, consumers expand their awareness of local species and are encouraged to experiment and learn new preparation and cooking skills. Having such direct contact with producers, or highly skilled and knowledgeable staff, can be particularly effective in raising awareness around food and sustainability practices.

BIO-BAZAR farmers' market in Warsaw, Poland

Economic sustainability

- Price premiums and added value for producers

Social sustainability

- Close relation and mutual trust between farmers and consumers
- Social connections and belonging to the local community
- Social gatherings and educational workshops and food events
- Social communication and active citizen engagement (via social media, website, etc.)

Environmental sustainability

- Organic farming
- Increased consumer awareness of good environmental practices in production

The BioBazar farmers' market combines the traditional farmers' market with a large city and historic premises. This local organic-food market is a SFSC initiative, created in 2010 by the company MyEcolife, inspired by organic food markets in other countries. BioBazar is situated in the premises of the former "historic" factory Norblin (which produced plated and metal parts), in Żelazna Street, Warsaw. In the post-industrial atmosphere, inside

100-year-old buildings, next to vintage machinery stalls, consumers can buy organic fruits, vegetables, dairy products, meats, cheeses, preserves, fish, cakes and pastries, juices, bakery products and many more. Many of these products are certified, high value-added organic products. Moreover, other organic products, such as cosmetics and cleaning products are sold.

The market was initially open every Saturday but following increased interest it is now open three times a week, on Wednesdays, Fridays and Saturdays. This is a unique place for locals, suppliers of organic products and tourists, where consumers can purchase a cup of Fair-Trade coffee or tea whilst interacting with farmers and other consumers.

BioBazar is a place for raising awareness and educating consumers. Shopping at BioBazar increases consumers' environmental consciousness in terms of food waste, choice of fresh products and general care for the environment. Visitors may even attend shows, culinary workshops, wine tastings or coffee brewing. For instance, every Friday a chef gives a cooking demonstration using ingredients that are on sale at the BioBazar. Market managers are proud of the educational role played by BioBazar: through attendance at events, customers gain deeper knowledge of organic production, balanced nutrition, and healthy living.



The Social Pillar: Good practices for sustainable SFSCs

Box scheme: Creel Fish Club, North Sea coast of Northumberland, England

Economic sustainability

- Price premium and higher returns for fishers
- Added value to the local fishing industry and economic development in associated sectors (e.g. catering, hospitality and tourism)

Social sustainability

- Enhanced consumer culinary capabilities
- Social capital, trust, co-operation, and knowledge-exchange via strengthened local networks and more direct-selling
- Increased cultural reputation and enhanced regional culinary heritage of the local area

Environmental sustainability

- Better management of marine biodiversity and fisheries, via the promotion of seasonal and locally abundant species, avoiding overfished mainstream species
- Increased consumers' awareness of more sustainable and less well-known species

The Creel Fish Club is a fish box scheme located in the village of Amble, on the North Sea coast of Northumberland, in the north-east England. Introduced in 2016, the scheme aims to promote fresh, local, sustainable and seasonal seafood, and is an example

of how a box scheme may generate local interest in seafood, celebrating regional food cultural heritage, and reducing reliance on imported and overfished stocks.

The Creel Fish Club operates similarly to the previously mentioned box schemes, whereby consumers order and commit to collecting their fish box from one of the local distribution points on a set day. Subscribers choose the size, frequency, and preferences (e.g. filleted, shellfish) of their individual box; however, the contents remain a 'surprise' depending on seasonal and weather conditions.

Sustainability is promoted by adjusting for seasonal variation which enables the offering of more locally abundant, albeit less commonly consumed, fish (such as whiting, plaice, gurnard, langoustines). This can alleviate the strain caused by overfishing as it reduces demand for mainstream seafood, and especially the 'Big Five' species: cod, salmon, haddock, tuna and prawns.

Regular subscribers to the fish box scheme proudly shared how they have improved/learnt how to fillet, experimenting with cooking methods (e.g. steaming fish) and recipes, while paying more attention to food hygiene (i.e. avoiding cross-contamination with fresh fish).

Consequently, they have gained a greater awareness and sensibility towards sustainable fishing practices and consumption, in favour of local and seasonal seafood.



Enhance collaborative innovation and digital platforms

Social media and digital platforms such as Facebook, Instagram and smartphone applications are becoming increasingly important as communication and marketing tools. Digital technology may be used to improve the co-operation and horizontal co-ordination between producers in SFSCs, as well as supporting producers in their marketing and communication activities with end-users. We looked at different digital tools and how these can enable producers to achieve more efficient

Farmers' markets network: Coldiretti's Campagna Amica, Italy

Economic sustainability

- Enhanced efficiency in promotion and marketing through a collaborative approach
- Price premiums for producers and higher added value

Social sustainability

- Producers' co-operation in marketing and promotional activities
- Job creation and better inclusion of women (e.g. marketing and trading)
- Fairness, trust and solidarity between farmers and consumers
- Digital inclusion connecting the local community and creating rural-urban linkages via modern technologies

Environmental sustainability

- Reduced packaging and recyclable materials
- Increased consumer awareness of environmental issues

Campagna Amica is a joint marketing effort that tackles diseconomies of scope. Founded in 2008 by Coldiretti (the largest Italian farming organization), it seeks to help Italian farmers overcome low bargaining power and difficulties retaining market competitiveness. Campagna Amica is a large network of short food supply chains, managed throughout Italy according to a uniform set of rules concerning branding and colours, regulation of the brand's usage, behavioural standards, code of ethics on environmental issues, and the control system.

marketing, logistics, and distribution of their products, meeting consumers' expectations for more convenient food purchases.

Strength2Food research revealed that many farmers lack the appropriate skills, or tools, for digital competence and information technology, particularly in relation to marketing, distribution and logistics. However, there were also successful examples where web-based platforms played a key role in connecting different actors and up-scaling SFSC initiatives - this was demonstrated by the case of the Italian farmers' markets network 'Campagna Amica', illustrated below.

All sellers at Campagna Amica farmers' markets are:

- farmers associated with Coldiretti who ensure the produce available is seasonal, local, and Italian;
- accredited by Campagna Amica: respecting the rules (behaviour, hygiene, transparency, label, controls, etc.) and benefitting from being members of the same network (promotion, visibility, communication, networking);
- farmers accept the statutes of the 'Associazione Agrimercato' and subscribe its regulations.

Key benefits of selling via the farmers' markets include greater certainty of sales and increased turnover. A key element of Campagna Amica has been on the demand side. Coldiretti invested resources into building a communication strategy to reach consumers, including via the Campagna Amica website and social media. Coldiretti developed a smartphone app to further enable connections between producers and consumers, for consumers to access information regarding farmers' markets times and dates, details about products and farms, as well as recipes. Consumers revealed their appreciation for such digital communication methods, especially during the 2020 Covid restrictions when the app facilitated communication with farmers who delivered products, at times when farmers' markets were not allowed to operate.

The Social Pillar: Good practices for sustainable SFSCs

Encourage networking and building enduring relationships

SFSCs represent opportunities for building enduring social relationships, offering a potential to preserve local know-how and foster connections between rural and urban areas. The case studies analysed illustrate that the products sold in SFSCs are often produced according to local traditions and know-how, with sales facilitated by direct personal relations and trust. SFSCs have the potential to reconnect urban and rural communities, presenting opportunities to strengthen social relations

between market actors. These relationships may also create a spill-over effect, with the construction of social bonds of mutual trust beyond the market, in the fabric of local communities.

Food markets and speciality shops offer opportunities to showcase local food traditions and preserve cultural heritage, which can be attractive to both local consumers and tourists. Such SFSCs can create connections between the city and surrounding rural areas, as showed by the case of farmers' markets in Szekszárd (Hungary), Dijon (France) and Hexham (England).

Szekszárd farmers' market, Hungary

Economic sustainability

- Economic viability and steady returns for producers, supported by a regular customer base
- Added value of products for variety, seasonality, and quality
- Added value of services such as hot meals

Social sustainability

- The marketplace represents a social space fostering social connections
- The marketplace showcases local tradition and preserves local know-how

Environmental sustainability

- Reduced car use and congestion due to the centrality of the market, encouraging alternative transport for consumers (e.g., walking, cycling, public transport etc.)

very small-scale farmers sell via the market, using 1-2 metre tables.

The customer base of the market comes from the 40,000 inhabitants of Szekszárd and its neighbourhoods. Despite the rise of supermarkets sales in the past 20 years, the number of regular customers is estimated to be about 2,000 to 3,000, which means that, through households, 30-40% of the local population regularly visits the farmers' market in Szekszárd. With such a regular customer base, the market is a traditional meeting point both for consumers and producers/suppliers. Since the recent renewal of the building and market premises, the farmers' market also operates as a hub for local exchanges and gatherings, offering its space and facilities for conferences and other local events.



In Hungary, farmers' markets are the most important and traditional form of SFSC. The centrally located market in the city of Szekszárd, is centuries old; holding its current location since 1969 and refurbished in 2014. The area of the market is 1,700 square metres, offering stands for dozens of small-scale producers selling their own products and several shops. The number of registered farmers is 55; with 65 grocers and other food suppliers (e.g. baker, butcher, sausage buffet, pasta maker, household accessories shop, etc.). The market includes both fresh products and processed foods, such as meat, sausages, ham etc, as well as opportunities for hot meals. Beside registered farmers, an additional 20-30

Dijon's central market, Côte d'Or, France

Economic sustainability

- Higher returns and value added to producers
- Farmers' bargaining power increased

Social sustainability

- Enduring farmer-consumer relationships based on trust and social connections
- The marketplace constitutes an important part of the social life of the community and the identity of Dijon

Environmental sustainability

- Supporting organic farming and more sustainable production methods (e.g. animal welfare)
- Reduced car use and congestion due to the centrality of the market, encouraging alternative transport for consumers (e.g., walking, cycling, public transport etc.)

Dijon's central market is 150 years-old with long-standing traditions and stable relationships both among producers and between producers and consumers. Located in a pedestrian area in the town centre, it

takes place every Tuesday, Friday and Saturday and demonstrates an example of a typical, traditional market found frequently in France (and Southern Europe). These markets have a long history, a regular customer base and are part of local economic and social life. In many cities, these markets are organised by local authorities. This political support gives the market continuity and stability, important for both producers and consumers.

A central driver for Dijon's market success is its diversity: encompassing farmers, retailers, processors, and different typologies of consumers. Most farmers are market gardeners, but there are also breeders (cheesemakers or meat producers), bakers, among others. The market is a place to foster multiple connections between customers, farmers, and retailers. Most consumers visit the same stalls regularly; some stating they have known "their" farmers and retailers personally for decades. Going to the market is an occasion to meet friends, neighbours, and many nearby cafés benefit from the vibrant life of the market.



The Social Pillar: Good practices for sustainable SFSCs

Hexham farmers' market, Northumberland, England

Economic sustainability

- Higher market returns and profit margins for producers
- Greater bargaining power for producers
- Value added and local multiplier effects in the local economy

Social sustainability

- Social connection and cultural heritage contributing to a strong sense of local community, co-operation, and identity
- Consumer confidence and trust in the provision of high-quality goods produced according to sustainable and ethical principles

Environmental sustainability

- Good farming practices e.g. extensive farming, higher animal welfare, organic, etc.
- Low food mileage, with production and consumption close to the point of sale
- Minimal packaging

Hexham Farmers' Market, established centrally in the picturesque market town of Hexham, north-east England in 1999, stands out for its unique, high quality and diverse product range provided by local producers. The market was recognised by the National Farmers Union (NFU) only three years after its conception and was subsequently selected as a regional representative in the 'Best Market' category for the BBC's Food and Farming Awards in 2015.

Every second and fourth Saturday, roughly 20 traders (from within a 50-mile radius) offer rare breed meats and game, fresh and smoked fish, artisan bread, award-winning traditionally made cheeses, organic fruit and vegetables etc.

The strong social value created in Hexham's market emerges from face to-face direct selling between producers and consumers. Regular attendees have trust and confidence in their local producers to provide high quality, fresh and seasonal goods; accepting the higher prices which reflect superior production processes, e.g. less intensive farming techniques, lower pesticides and higher animal welfare conditions (e.g. organic), and ethical practices such as fair prices for producers. Producers, in turn, benefit from increased profitability and market returns.

The social aspect of the market space facilitates knowledge exchange, social interaction and collaboration, as producers and consumers share opinions, knowledge and recommendations, helping businesses to refine their offerings. However, the relatively small number of regular customers represents a central challenge. To thrive the market needs to expand its customer base, attracting a younger, less affluent clientele, whilst continuing to deliver social benefits to the local community. A more targeted digital marketing and distribution strategy (e.g. mobile App), may attract a wider customer base.



The environmental pillar: Good practices for sustainable SFSCs

Turning to the environmental pillar, Strength2Food analysis revealed a relatively high carbon footprint (and other emissions) per kilogram of produce for many types of SFSCs compared to longer chains. The results suggest that consumers make up a significant part of

the transport-related emissions, which are mainly due to the small quantities of products being transported, and the relatively long distances consumers travel in some types of SFSCs, such as pick-your-own and on-farm sales (Figure 4).

Minimize environmental footprint through co-ordinated logistics and efficient distribution

There is significant potential for improving the environmental sustainability of food supply chains through innovative business models. Digital platforms may help to make SFSCs more operationally efficient, by shortening producer-consumer travel distances, reducing the costs of logistics, but also improving their convenience (e.g. co-ordinated last-mile logistics, collaboration in merging consumers' small orders, co-ordinating group shopping at farmers' markets, centralised distribution networks with click and collect, etc.). Digital distribution hubs and improved systems for last-mile logistics are one of the most promising innovative types of SFSCs.

Last mile logistics refer to the movement of goods from a distribution hub to the final consumer destination.

Improving last-mile delivery has sparked considerable attention in the recent past, with untapped potential in the food sector. This interest has been triggered by the success of innovative business to consumers (B2C) models based on e-commerce. Although the application of new digital technologies in last-mile logistics and distribution strategies appear rather underutilized in the context of SFSCs, there remains considerable potential to further increase convenience and access to sustainable food for customers.

The case study of the Nordic REKO-rings model represents a direct sales channel mitigates the SFSC carbon footprint of SFSCs in several ways. Specifically, this type of initiative does not allow the return of unsold products, since all products are pre-ordered, and no sale is allowed at the pick-up point; moreover, the meeting places are located centrally, e.g. in a town square or a parking lot by a shopping mall, which reduces distances travelled by consumers.

REKO-rings, Norway, Finland and Sweden

Economic sustainability

- Reduction in costs associated with transportation
- Price premiums for producers

Social sustainability

- Direct contact and mutual trust relations between farmers and consumers
- Digital community (on Facebook), fostering a sense of belonging and promoting knowledge-exchange
- Convenience in purchases for consumers

Environmental sustainability

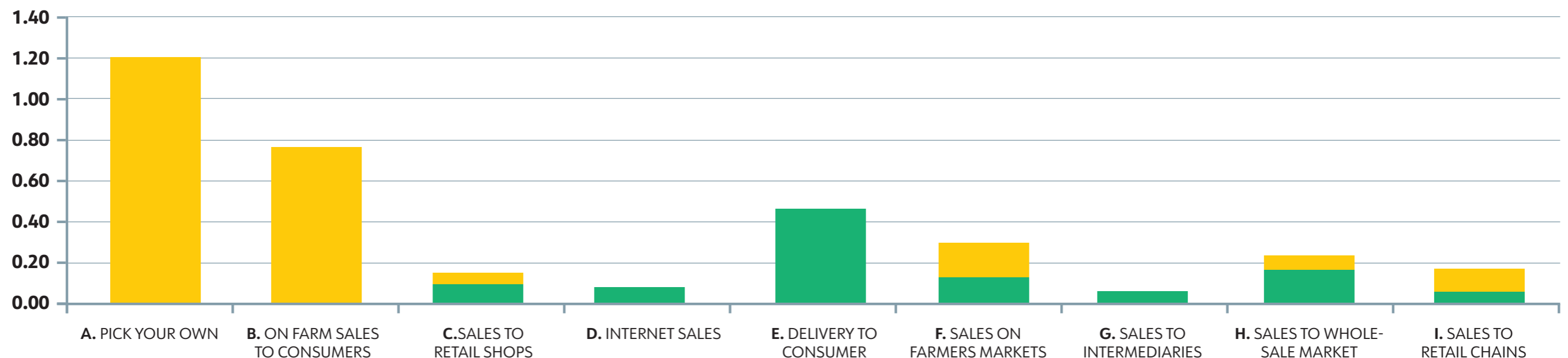
- Efficiency in distribution reducing transport travels by consumers
- Minimal/zero food waste (pre-orders avoid return of unsold products)
- Supporting organic farming

A REKO-ring consists of a group of producers forming a Facebook group where they advertise their products and invite customers to place orders. After orders are made, the producers and consumers collectively meet at a set time in a central meeting point where the products are delivered. The whole session only takes from half

an hour to an hour which, is shorter than attendance at a farmers' market, making it a time efficient way of distributing food for both producers and consumers. In the Norwegian REKO-rings, payments are increasingly digital: managed through a smart phone application "Vipps", which makes purchases easy and more flexible (allowing consumers to either pay in advance or directly when they collect the products).

REKO-rings have recently become popular in the Nordic countries. Inspired by the French AMAP model, it was introduced in Finland in 2013, where a couple of hundred active rings are reported. In Sweden, the first REKO-rings were introduced in 2016 and in Norway 2017. In Norway, approximately 500 farmers/producers sell through 120 REKO-rings spread across the country. The success of REKO-rings is largely due to digital platforms such as Facebook and smart phone applications, which efficiently facilitate direct distribution and payment for goods. In total, 500,000 people are registered on Facebook as members of Norwegian REKO-rings, although a smaller proportion is regular customers. This type of initiative shows the potential of innovative business models, mediated by digital tools, to tackle environmental issues and reduce the carbon footprint of food consumption through efficient distribution.

Figure 4. Level of producer and consumer carbon footprint (CFP) across supply chains



Recommendations

SFSC is an umbrella term capturing a wide range of different schemes and initiatives. Although diverse and varying in their history and practices, these initiatives share governance approaches and organizational structures, which are alternatives to conventional distribution methods for food. This guide illustrates several examples of initiatives aiming to improve the profitability of farms and producers, whilst generating wider societal and environmental benefits.

Our research expands existing knowledge on the sustainability benefits of SFSCs and casts new light on the challenges producers and market actors are currently facing. The economic and social benefits highlighted throughout this guide aligned with previous studies on this topic; however, we reveal that the environmental impacts of SFSCs are more complex than often acknowledged previously.

Whilst the ability of SFSCs to increase consumers' awareness of environmental issues is clear, it will be necessary to further understand the complexity of the environmental impacts connected to the different stages of production, distribution and consumption of food in SFSCs.

It is important to emphasize that there is no uniform development path for SFSCs in Europe, and that experiences from one country and region cannot automatically be transferred to other contexts.

However, some common trends can be identified. For example, in some countries (i.e. UK, Norway) hypermarkets and discount chains occupy a dominant position in the food market. Similar trends are currently shaping other European countries' food marketplace. In view of these trends, SFSC face the challenges of competing with more powerful market actors. However, given their potential to contribute to economic, social and, to a lesser extent, environmental sustainability, further ways to enhance the role of SFSCs should be explored. A further trend, observed in many countries, relates to the digital transformation of the agri-food sector, where online sales and marketing are playing an increasingly prominent role. It is therefore important to reflect further on the potential of innovative business models and digital platforms to drive change in the agri-food sector, with this guide offering several examples.

In conclusion, the study's findings contribute towards a better understanding of the impacts of, and problems faced by, SFSCs. While many good practices already exist, as illustrated by the case studies presented here, there is an opportunity to work collaboratively to expand these initiatives and contribute to the wider sustainability of agri-food systems. We will provide some key recommendations in this direction on the following page.

ACTIONS FOR SFSC PRACTITIONERS

Economic pillar

- Strengthen horizontal and/or vertical co-operation to share costs, competence and exchange knowledge
- Offer a wider range of products to consumers through internal diversification of production and / or co-operation with other producers
- Develop more focused offers for specific market segments, e.g. young consumers, tourists, restaurants
- Implement service marketing strategies that focus on aesthetics and experience to attract a wider and younger customer base
- Invest in training activities to improve sales skills that include marketing, packaging, communication to consumers via digital channels
- Use digital platforms (social media, smartphone apps) to communicate with existing consumers and to attract new consumer groups

Social pillar

- Organise social events (i.e. farm visits, fairs) connecting farmers and potential customers, to improve mutual understanding, trust and enlarging the customer base
- Allocate a place for dialogue and socialisation in markets and delivery places (common examples include an offer of coffee or tea and space for consumers to socialise)
- Communicate with consumers to promote and share knowledge about food products, food processing, farming and fishing practices (e.g. share recipes and cooking methods)
- Arrange cooking/food workshops and tasting events to educate consumers on how to use, handle and prepare products. This is particularly important for fish.
- Producers should co-operate on distribution and direct marketing (box-schemes, food-platforms, etc.)

Environmental pillar

- Optimize transportation efforts through co-ordinated logistics, co-operation, and better use of capacity in the means of transportation
- Avoid using non-recyclable packaging
- Promote organic farming and more sustainable production methods
- Raise consumer awareness of environmental issues linked to food production and consumption

ACTIONS FOR POLICY MAKERS AND PUBLIC AUTHORITIES

Economic pillar

- Support SFSCs to improve collaborative food storage, processing, transport and other distribution technologies and infrastructure
- Attract new / young motivated entrants into the agriculture/fishing sector – via start-up grant and loan schemes to support purchases of equipment and storage infrastructure, training on technical, digital and marketing skills

Social pillar

- Support collaboration between different chain actors and enable co-operation with allied enterprises, such as tourism providers and the hospitality sector
- Support the promotion of regional food cultures through improving access to grant and loan funding for small-scale producers and other SFSC actors
- Support educational initiatives and campaigns with the aim of enhancing consumer knowledge and perceptions towards the consumption of local fish and agri-food products

Environmental pillar

- Provide incentives for sustainable transportation and logistics planning to reduce carbon emissions and measures to improve the environmental performance of food storage and processing (e.g. energy reducing solutions)
- Support actions directed towards the development and implementation of innovative and more environmentally sustainable supply chains (e.g. digital platforms and sales)
- Provide policy and programme support for municipal public markets to strengthen public and green spaces
- Integrate SFSC policy with other relevant policy domains, like rural tourism, environmental sustainability, and food waste reduction
- Promote knowledge exchange of know-how and best practices across and between different territories and regions

References

THE RESEARCH TEAM
JANUARY 2021

Strength2Food research:

Malak-Rawlikowska A., Majewski E., Wąs A., Gołaś M., Kłoczko-Gajewska A. Borgen S. O., Coppola E., Csillag P., Duboys de Labarre M., Freeman R., Gentili R., Gorton M., Hoàng V., Kuraj S., Lecoeur J-L., Mai N., Menozzi D., Nguyen A., Saidi M., Tocco B., Torjusen H., Török Á., Veneziani M., Vittersø G., Wavresky, P. (2019a). Quantitative Assessment of Economic, Social and Environmental Sustainability of Short Food Supply Chains and Impact On Rural Territories. Project Deliverable 7.2, Strength2Food, 2019.

<https://www.strength2food.eu/2019/02/28/quantitative-assessment-of-economic-social-and-environmental-sustainability-of-short-food-supply-chains-and-impact-on-rural-territories/>

Malak-Rawlikowska, A., Majewski, E., Wąs, A., Borgen, S. O., Csillag, P., Donati, M., Freeman, R., Lecoeur, J-L., Mancini, M. C., Nguyen, A., Saidi, Tocco, B., M., Török, Á., Veneziani, M., Hoàng, V., Vittersø, G., Wavresky, P. (2019b). Measuring the Economic, Environmental and Social Sustainability of Short Food Supply Chains, Sustainability, 11(15), 4004. DOI: 10.3390/su11154004.

<https://www.mdpi.com/2071-1050/11/15/4004>

Majewski, E., Komerska, A., Kwiatkowski, J., Malak-Rawlikowska, A., Wąs, A., Sulewski, P., Gołaś, M., Pogodzińska, K., Lecoeur, J-L, Tocco, B., Török, Á, Donati, M., Vittersø, G. (2020). Are short food supply chains more environmentally sustainable than long chains? A life-cycle assessment (LCA) of eco-efficiency of food chains in selected EU countries, Energies, 13(18), 4853. DOI: 10.3390/en13184853.

<https://www.mdpi.com/1996-1073/13/18/4853>

Vittersø, G., Torjusen, H., Laitala, K., Tocco, B., Biasini, B., Csillag, P., Duboys de Labarre, M., Lecoeur, J-L., Maj, A., Majewski, E., Malak-Rawlikowska, A., Menozzi, D., Török, Á., Wavresky, P. (2019). Short Food Supply Chains and their Contributions to Sustainability: Views among Participants in 12 European Cases, Sustainability, 11(17), 4800. DOI: 10.3390/su11174800.

<https://www.mdpi.com/2071-1050/11/17/4800>

Vittersø, G.H.; Torjusen, K.M.; Laitala, F.; Arfini, B.; Biasini, E.; Coppola, P.; Csillag, M.; Donati, M.; Duboys de Labarre, R.; Gentili, M. Qualitative Assessment of Motivations, Practices and Organisational Development of Short Food Supply Chains. Project Deliverable 7.1, Strength2Food 2018.

<https://www.strength2food.eu/2018/10/31/qualitative-assessment-of-motivations-practices-and-organisational-development-of-short-food-supply-chains/>

Other references:

European Communities (2013). Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on Support for Rural Development by the European Agricultural Fund for Rural Development (EAFRD) and Repealing Council Regulation (EC) No 1698/2005; European Communities: Luxembourg.

Messina, B. (2020), Improving the appeal of farmers' markets to younger adults, Newcastle University Business School, Bachelor thesis, Newcastle upon Tyne, UK.

Sisco C., Blythe Chorn B., Pruzan-Jorgensen P.M. (2010). Supply Chain Sustainability. A Practical Guide for Continuous Improvement, UN Global Compact Office and Business for Social Responsibility.

Acknowledgements - This guide was written by:

Gunnar Vittersø, Svein Ole Borgen, Oslo Metropolitan University, Norway

Edward Majewski, Agata Malak-Rawlikowska, Warsaw University of Life Sciences, Poland

Barbara Tocco, Newcastle University, UK

With the collaboration of the following partners:

Newcastle University, UK

Matthew Gorton, Fiona Hallam, Roberta Discetti

University of Parma, Italy

Davide Menozzi, Beatrice Biasini

Confederazione Nazionale Coldiretti (CNC), Italy

Rita Gentili, Ermanno Coppola

Eco-Sensus Research and Communication¹ & Corvinus University of Budapest², Hungary

Peter Csillag¹, Áron Török^{1,2}

AgroSup Dijon, INRAE, Bourgogne Franche-Comté University, France

Jean-Loup Lecoeur, Matthieu Duboys-De-Labarre

School of Economics, University of Economics Ho Chi Minh City, Vietnam

Viet Hoang, An Nguyen Quynh, Mai Nguyen



Strength2Food

Strength2Food (www.strength2food.eu) is a 5 year project which researches, supports and promotes quality and sustainability in agricultural and food systems. Our thanks go to all the professionals and stakeholders who helped us in the work.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 678024. This document reflects the views only of the authors, and the Agency cannot be held responsible for any use which may be made of the information contained therein.

Produced with the help of:

PUBLICSECTOR
CATERING

