

Innovations proposed by Italian SFSCs in the Smartchain project

Smartchain project's objective is to foster and accelerate the shift towards collaborative short food supply chains and, through concrete actions and recommendations, to introduce new robust business models and innovative, practical solutions that enhance the competitiveness and sustainability of the European agri-food system.

It includes 9 WPs, and among them, WP2 is specifically aimed to identify the appropriate technological and non-technological innovations for improving the performance of short food supply chains and identifying and characterising their applicability.

This study is part of a larger survey carried out in the Tasks 2.1 and 2.2. of Smartchain WP2.

WP2 is aimed at identifying the needs of SFSCs in terms of technological and non-technological innovations (TECI and NTI) able to improve their performance. Furthermore, this WP would also evaluate and characterise the applicability of these solutions. This poster deals with the results of the investigation performed analysing 4 case studies in Italy. Data collected will be merged with those obtained by other case studies in different European countries involved in the Smartchain project and will allow completing the definition of an inventory of the typical needs and innovative solutions for the SFSCs.

The **methodology** adopted refers to that studied and shared with the other partners of the WP. First, a conceptual framework has been designed in order to develop a structured approach for the identification of those technological and non-technological innovations for short food supply chains (SFSCs), which can be introduced for improving the performance of short food supply chains. The approach can be used for identifying and characterising their applicability, as well as to develop a specific method for analysis and characterisation of their applicability. The identification of the explicit and hidden needs of SFSCs (consumers and chain operators) has been carried out through a questionnaire survey; the data analysis allowed to complete an inventory of the SFSCs' needs. The innovative solutions have been identified from good practices but also other experiences that these chains have adopted to reduce or eliminate those weaknesses. The inventories of the needs and the innovative solutions will be analysed for identification of the gaps of availability of innovative solutions for specific needs of the SFSCs (Figure 1).

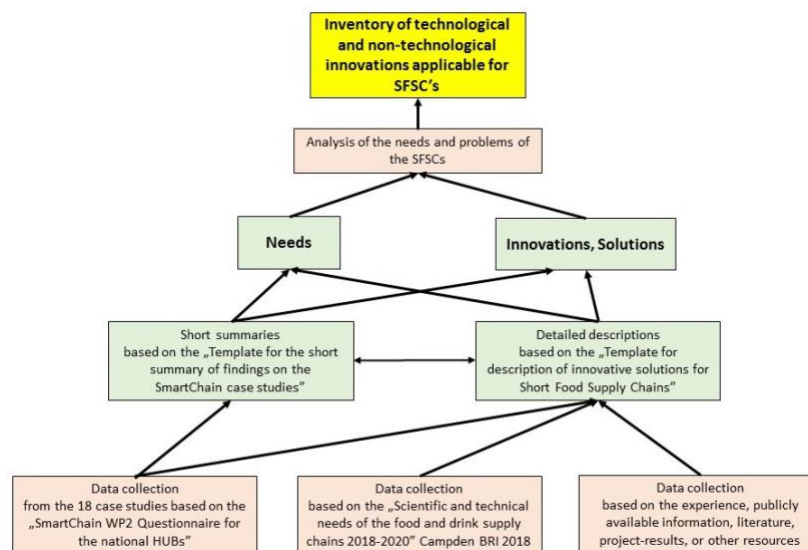


Figure 1 – Analysis of the needs and problems and the related innovative solutions

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Each innovative solution has been described and the whole solutions organised into an inventory, including 9 areas of innovation (9 sub-tasks):

1. Agriculture and primary production
2. Food safety and hygiene aspects and regulatory issues related to technological and non-technological innovation
3. Food quality aspects
4. Food preservation and other processing technologies including preservation of freshness and nutritional value and packaging from
5. Logistics, accessibility of the product and short food chain channels
6. Food integrity, traceability, transparency, certification, voluntary labelling, food chain management and networking
7. Marketing concepts and communication tools
8. Structural and economic aspects, enhancing collaborative short food supply chains
9. Modern information and communication technologies (ICTs).

In the last step, TECI and NTI were categorised to identify the ones serving consumers' and/or chain actors' needs. They can be related to a particular step of the supply chain or the chain as a whole.

Each national Hub of the project was involved and had to submit this tool to the local case studies. The questionnaire includes information and details about the surveyed SFSC, a tool (cross-reference table) to fill out with the perceived needs and the step of the supply chain where the innovative solution is applicable. Thereafter, some open question investigates the innovative solutions adopted (i.e. "Describe the specific need or problem being addressed by the case and please explain what is the novelty of this innovative solution") and the typical failures. The most critical weaknesses of the SFSCs have been identified matching and classifying the needs identified by the researcher experience and those derived from the survey. This template represented the background framework to develop the matrix to collect and categorise the innovative TECI and NTI (Figure 2).

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		individual steps of the SFSC							short food supply chain as whole						
		farming	primary production	transport	processing and packaging	storage	logistics	sale	product integrity/authenticity/transparency	marketing concepts	food chain management and networking for enhancing cooperation among chain actors	business modelling	policy environment	legal requirements	labelling
needs of the consumers (citizens)	food safety														
	food quality														
	trust														
	ethical aspects														
	accessibility														
needs of the chain actors	fair price														
	increased negotiating power														
	shared use of available resources														
	product development support														
	access to markets and consumers														
	access to infrastructure														

Figure 2 – Matrix for collection and categorisation of innovative NTI and TECIs

Italian case studies description and results of the survey

1. Alce Nero is an association of farmers producing organic products. Main activities comprise producing, processing and retailing of cereals, tomatoes, oil and cane sugar (South America). Alce Nero considers an innovation its approach towards the production and processing of the food since they base their decisions on in-depth research. To illustrate, Alce Nero, together with the University of Bologna, is developing a new variety of *Triticum monococcum* and a mix of soft grains that can also be consumed by celiac people. Another important project is the hay milk, in collaboration with the University of Perugia. The project aims to create a comparison of the chemical compounds of the different types of milk produced by cows that feed on conventional methods and by cows which are not introduced with the feed from fermented forage, corn or GMO products. However, Alce Nero is faced continuously with problems related to the market. Before finding the market, it is difficult to direct their partners, who are also their suppliers, to grow einkorn. In other words, it is the willingness to produce and the willingness of the consumer to buy the products that direct their decisions. Another problem is also the financial resources. Alce Nero must continually find resources to take the research forward. Nevertheless, regarding innovative IT solutions, the association is still lagging behind.

2. Arvaia is a Community Supported Agriculture organisation, i.e. a form of organisation of agricultural production and consumption of agricultural products based on the alliance between those who produce food (farmers) and the people who eat it (users). Each year, vegetable

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production is financed by members and users through an annual fee, which is defined according to the annual crop plan. Members who economically support agricultural production are entitled to obtain part of the harvest. Arvaia distributes fresh products through 8 distribution points scattered throughout the city.

After the survey with Arvaia, the following needs were outlined.

- Increased storage potential at low temperature (cold room) of the produced goods, to solve the problem of uneven cold chain and potential risk of product deterioration.
- Increased automatization.
- Need of a well for irrigation and subsequently usage of public drinking water that have high costs.
- Increased participation of the members
- Better organisation of human resources to ensure continuous market presence
- Lower transportation and environmental costs to reach the distribution points (can be improved with an investment in electric transport)
- Increase volumes, in order to satisfy the market
- Increase investments in market-related activities such as food education, events, etc.
- Reduce high management cost (water and land rentals)

3. Campi aperti is an association of producers and co-producers which activities include from the production to the retailing of a whole food range, fresh and processed. The association organises its markets in the city of Bologna. Regarding the services, the organisation, formed by the members, carries out the services of logistics, organisation, secretariat, management of the mailing list and communication.

The main innovation is related to non-certified products. Over the years, Campi Aperti has adopted a participatory guarantee system approach, implementing a community control protocol, in which members who are also producers inspect other producers and assure that all the requirements for organic production are fulfilled. The campaign called "*Genuino clandestino*" is another innovation introduced in 2011 and still ongoing. This campaign is about products obtained through a homemade processing phase fulfilling only hygiene standards which are based on personal valuation rather than official regulation.

Also, the association has tried to improve and innovate not only production but also its management and organisation. They have adopted the so-called "consensus method" (Briggs, 2014) that is a particular decision-making methodology. This methodology is applied during Assembly meetings. It is based on the idea that the activities that the organization will have to undertake are designed collectively. In particular, it is not expected that there will be the classic "in favor" or "against" positions, but rather that there are always two levels: that of the "relationship" and that of the "content". As for the relationship, the individual's position about an idea is always based on trust towards the person who proposed it. It is possible to give consent, even if doubts emerge: whoever gives it accepts the risks of the proposal and takes an active part in its fulfillment. Another position, which approaches the concept of abstention, is that of "staying aside", which is equivalent to agreeing with the content of the proposal but not having sufficient energy to collaborate in the realization of this proposal, that is, not being very much in agreement with the contents but nevertheless believing that the group must continue to work on it anyway. To express the objection of an idea, instead, is used "blocking", which is equivalent to a very strong "no" that indicates to the group the need to stop and review the proposals under consideration.

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4. Mercato Ritrovato is an association aiming to promote agriculture and the territory through a farmers' market called "*Mercato Ritrovato*". The project started ten years ago in collaboration with Slow Food, the Cineteca of Bologna and the province government of Bologna, with the support of the Carisbo bank foundation. The main activities of the association include direct sale from producers, who manage their own stands, the organisation of workshops and events in the central tents of the market by involving companies directly. The events sometimes are a kind show cooking where specialists prepare speciality food.

One of the main innovations is a 10% discount on the market fees for the farmers who are present every week in the market, as an incentive to continuity. In addition, the so-called "slow use of the street" is considered by the association as an innovative solution. The association has requested the municipality to allow street artists to perform in the area. Thus, the market's day is not only a meeting point between farmers and consumers but also a place of entertainment and promotion of young artists. Still, to date, Mercato Ritrovato has not applied any innovation in terms of automation of activities or decision making through IT solutions.

Conclusions

The aim of this part is to understand the organisation of SFCS and identify possible innovative applications. Results from this work indicate that the organisation of SFCS in Italy is complex and diverse. The case studies considered in this research were part of the Emilia-Romagna region, however, they propose different ways on how the exchange of the products take place between producers and consumers. Nevertheless, it is important to underline the fact that some similarities are also present. Firstly, the relation between producers and consumers it is not based only on an economic level but also trust where consumers, even though are not provided with official certification or standards, rely on the offer made by the producer/farmer. Secondly, the organisation and management of these realities does not rely a lot on technological or IT innovative systems but on very traditional systems.

Considering these aspects it is easily deduced that at the moment these SFCS are based on traditional organization and communication systems, bringing some past flavours to the modern society where smart technologies and algorithms are organizing the daily life.

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