



**Guide to the implementation of
the method for improving the
competitiveness of Short Food
Supply Chains through the
application of innovations**



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Abbreviations and/or nomenclature

BN: bottleneck

NTI: non-technological innovation

SF: success factor

SFSC: Short Food Supply Chain

SME: Small- and medium-sized enterprise

TECI: technological innovation

1. Introduction

There is growing consumer demand for the products and services of SFSCs in recent times. Short food chains, where the farmers and producers sell their products directly to the consumers or with a minimum number of intermediaries, become more popular nowadays, resulting in the flourishing of this food supply alternative in both the rural and urban areas. The Rural Development Regulation of the European Union (1305/2013/EU)¹ defines that "short supply chain means a supply chain involving a limited number of economic operators, committed to cooperation, local economic development, and close geographical and social relations between producers, processors, and consumers". They represent different types of SFSCs like purchase on the farms, online or offline marketplaces, producing and selling individually or cooperatively, in communities (community supported agriculture).

However, SFSCs sometimes have little bargaining power. Thus, one of the most obvious methods for increasing competitiveness is differentiation based on the "value for money" concept. To provide value for the consumers, each SFSC organization needs to define and be aware of the specific value it can provide, the reason, and why the customers will choose its product. Therefore, it is essential to define the consumer-focused "value propositions" of each SFSC organization to see the actual and the further opportunities to develop. This method is what this guide aims to address.

To achieve this objective, each SFSC organization should first identify its success factors (SFs) and bottlenecks (BNs). Success factors support the exploitation of the opportunities and eliminate or reduce the threats. Bottlenecks can hamper the exploitation of an opportunity or can increase the impact of treats. By considering these two elements, SFSC organizations can identify their current value propositions

Moreover, two categories of value propositions are distinguishable. Those which focus on the values delivered to the consumers and customers "consumer-focused value propositions", and those which deliver benefits for the members of the short food chains "short-chain focused value propositions".

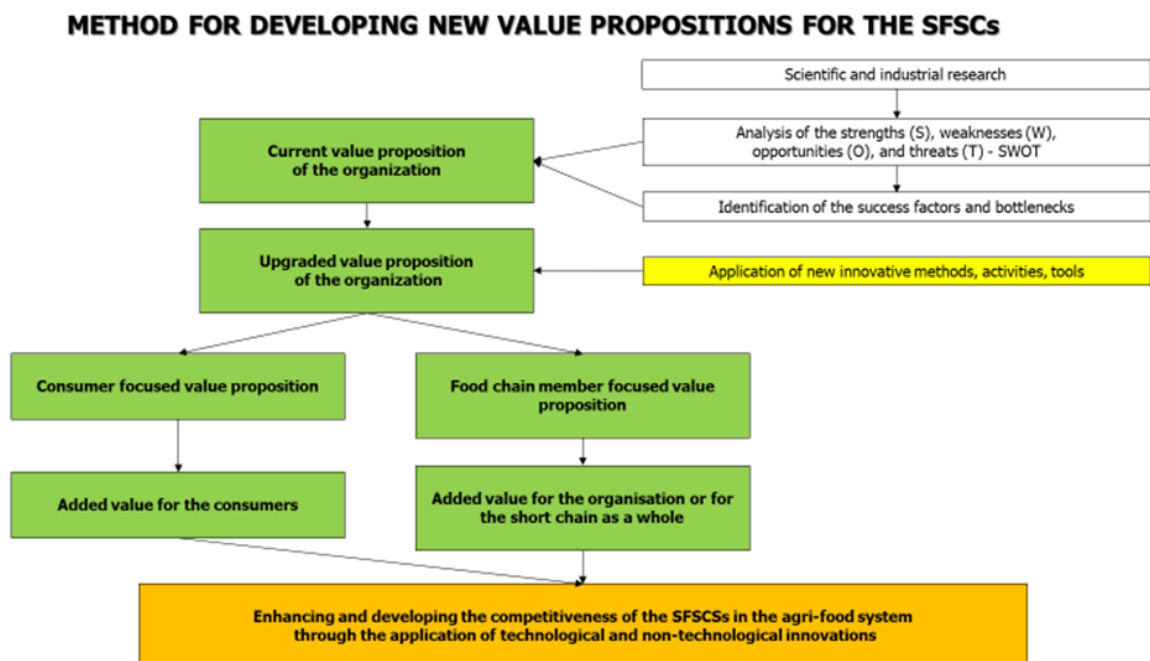
By considering these elements, each organization can develop strategies and action plans to improve its performance by applying technological and non-technological innovations (activities, methods, tools, and solutions) that enhance success factors and/or eliminate bottlenecks.

2. The recommended method to improve the performance and competitiveness of the SFSCs

- Step 1: Identify your current value proposition**
- Step 2: Analyze your situation (potentially by SWOT-analysis) - and identify your SFs and BNs**
- Step 3: I Identify applicable innovations, necessary activities, tools, and methods to develop your business innovations**
- Step 4: Upgrade your value propositions, increase the added value**
- Step 5: Identify your strategy(ies) prepare an action plan**

Developing the operation of the Short Food Supply Chains through the identification of their success factors and the elimination of their bottlenecks is applied for the analyses of the SFSCs that would make them more sustainable and competitive in the agri-food system. The method was implemented and tested in the SMARTCHAIN project to collaborate with 18 case studies of the Short Food Supply Chains from 9 countries (CH, D, FR, GR, HU, IT, NL, SP, RS).

As a result of the scientific and industrial research, a new method was developed based on a systematic step-by-step analysis of the SFSC businesses for the smooth functioning of the short food chain organizations. It helps to find solutions for eliminating the bottlenecks and strengthen the success factors for sustainable operation of the SFSC members and/or the SFSCs as a whole. The value propositions provided by the SFSCs organizations for the consumers can be categorized based on consumers' acceptance and preferences (consumer needs) for the food and services provided by Short Food Supply Chains. Through the application of technological-, (TECIs) and non-technological innovations (NTIs) (e.g. new methods, activities, tools, etc.), SFSCs can also upgrade their current value propositions for their members. They can meet better the consumers' needs. The method helps to identify how the added value of the products and services of an SFSC can be increased to make them more appealing for the consumers (Figure 1).



1. Figure: Method for developing SFSCs more sustainable and competitive

Step 1: Identify your current value proposition

The first step is the screening of the operation of the short-chain organization. The organization should consider the value and the benefits, which they can currently provide to the consumers. **Why are the organization's products different from the other products, and why are they unique for the consumers?**

A value proposition refers to the benefits of a company's promise to deliver to the consumers and customers ("consumer-focused value propositions"). **"What value the business offers to the consumers, why the consumer will choose their product?"**

These are distinguishable from those value propositions, which can benefit the short-chain members ("short food chain members focused value propositions").

First, the current value proposition can be identified, which is currently provided by the short-chain business for the consumers. The current value propositions of each SFSC can be upgraded to improve their performance and provide more attractive value propositions than the current value propositions, thus meeting the consumers' needs better. If the SFSCs identify the relevant innovations, they can elaborate new, upgraded value propositions and strategies to implement these innovations.

Step 2: Analyze your situation (potentially by SWOT analysis) and identify your SFs and BNs

The second step is the analysis of the current situation of the short-chain organization. Identify the success factors and bottlenecks and the current value proposition of your short food chain. Many solutions, activities, tools, and methods can be found and are applicable to eliminate the bottlenecks and enhance the competitiveness of the short-chain organizations. By applying innovations, activities, and methods, upgraded value propositions can be developed for each SFSC organization, providing added value for the consumers.

Identify the strengths (S), weaknesses (W), opportunities (O), threats (T) of your short food chain business by the SWOT analysis

Please consider the following:

What is the current situation, and what are the problems that need to be improved?

S-O: To what extent can this strength help you to take advantage of the opportunity? - High S-O: attack, the chances are good.

S-T: To what extent can we use this strength to overcome this threat? - High S-T: defence, the business has the power to overcome external threats.

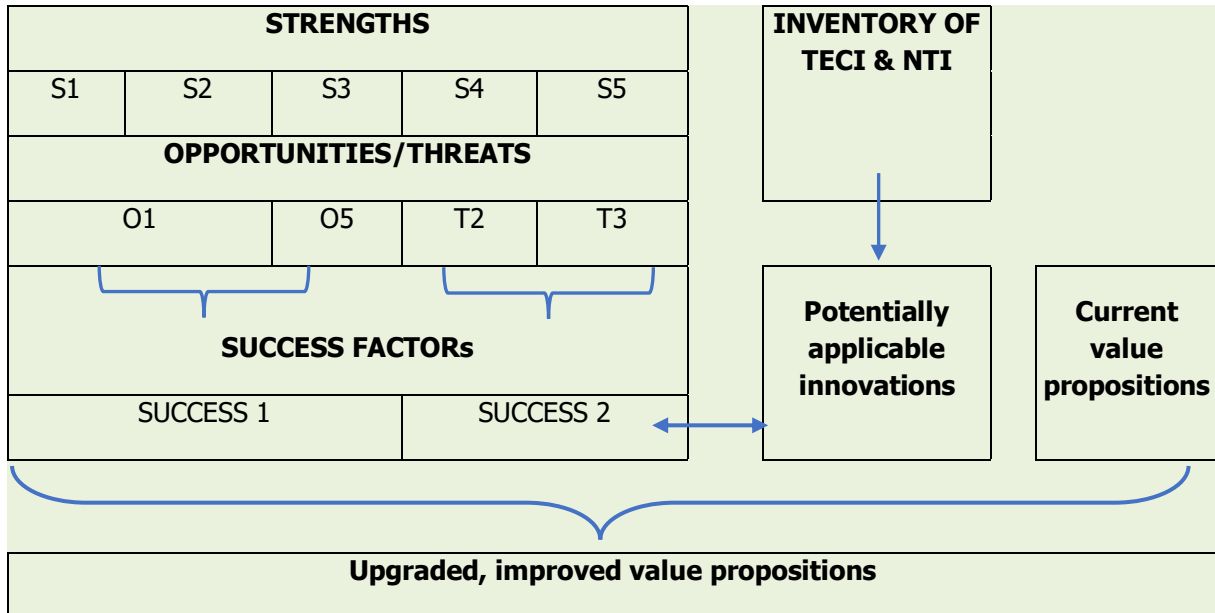
W-O: To what extent can this weakness hinder you from taking advantage of this opportunity? - High W-O: "clean ship" or reorientation, overcome the weaknesses to take advantage of the opportunities.

W-T: To what extent does this weakness make more threatening the threat? - High W-T: crisis, the threats are serious, and the business does not have the means to deal with them.

Identification of the typical success factors and bottlenecks

Success factors are those strengths that innovation can enhance

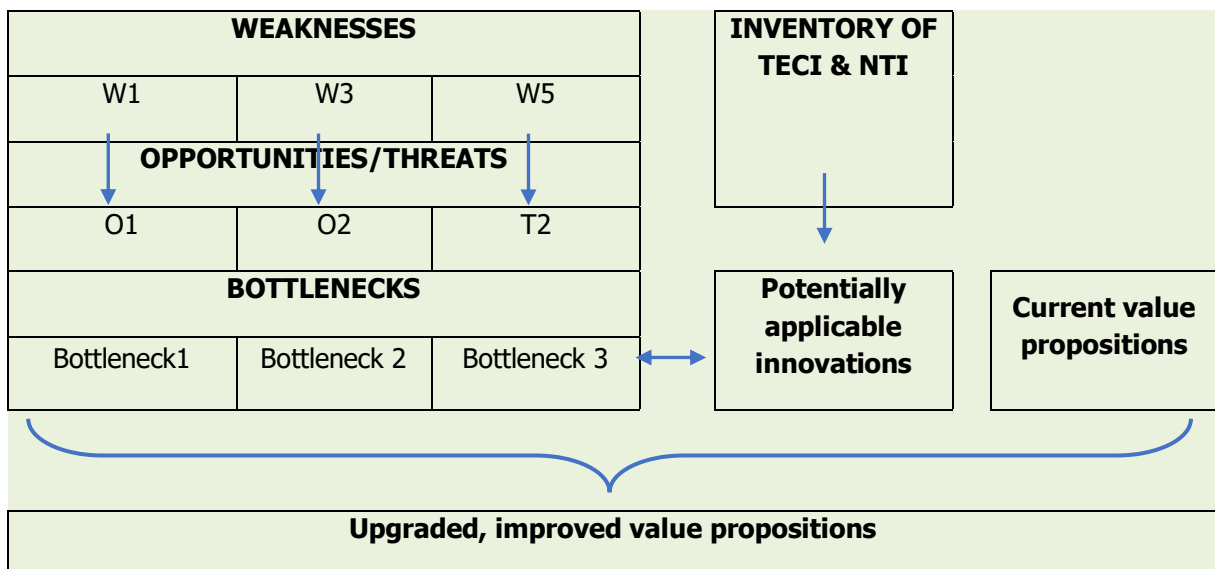
- to support the exploitation of an opportunity to improve the performance of the SFSC (S+O)
- to eliminate or reduce a threat that can decrease/spoil the performance of the SFSC (S-T)



2. Figure: Method to identify the success factors

Bottlenecks are outcomes of those weaknesses:

- that can be eliminated or reduced by an innovation
- that can hamper the exploitation of an opportunity to improve the performance of an SFSC (W-O)
- that can increase the impact of a threat that will reduce/spoil the performance of the SFSC (W+T)



3. Figure: Method to identify the bottlenecks

The SFs and the BNs of a Short Food Chain can be evaluated whether some of the SFs can be enhanced or BN can be eliminated through innovations. If relevant innovations are identified, new, upgraded value propositions can be developed, and strategies can be elaborated to implement these innovations (Figure 1). Through the application of innovations (which can be technological - TECIs and non-technological innovations - NTIs, new methods, activities, tools, etc.), the current value propositions of the SFSC members can be upgraded to meet the consumers' needs better. These results are offering the increasing added value of SFSCs to the consumers.

Step 3: Identify applicable innovations, necessary activities, tools, and methods to develop your business innovations

Identify the potential additional activities, tools, and methods for developing your business using innovative solutions

In this step, the work focuses on developing a strategic action plan for each organization and the potential application of TECI and NTI to enhance the SFs and reduce the BNs. Proposed additional actions, tools, and methods for improving the organisations' operation and products and services using innovative solutions can be identified.

Step 4: Upgraded value propositions, added value

Identification of a potential, upgraded, additional value proposition

Based on the potential application of innovations previously identified to enhance the SFs and/or eliminate the BNs, elaborate one or more upgraded value propositions for your organization. They aim to improve the organizations' performance and provide more attractive value propositions than the current value propositions.

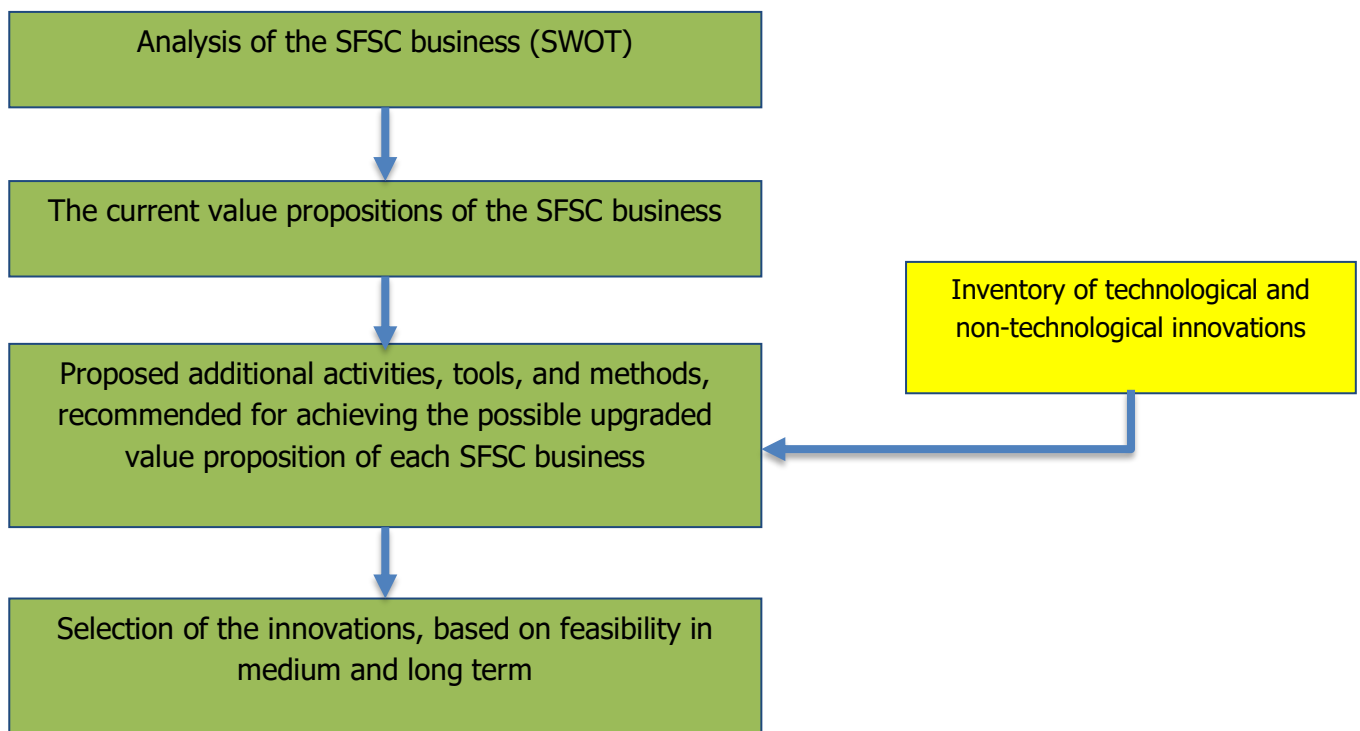
Step 5: Identify the strategy(ies) prepare an action plan

Identify your strategy(ies) to achieve the possible value propositions.

Finally, after understanding the status and the performance of your organization, its SF and BN, and the potential innovations that can be applied, this step focuses on describing a detailed strategy for achieving the proposed upgraded value propositions. You should carefully consider this step's outcome as the organization's success depends on applying the innovations proposed in the previous steps.

Prepare an action plan

Develop an action plan for the implementation of the method. First, a list of the steps is required to implement the targeted strategy in chronological order, including assessing the resources required (including the human resources, financial resources, equipment resources, other resources needed).



4. Figure: Flow chart of the process of selection of technological and non-technological innovations

Please consider and analyse the following aspects: technological feasibility, financial feasibility, organizational aspects.

Examples of the best practices of innovation

Technological innovations:

- Freeze-drying (applied by La Truda Alava, Spain)
- Vending machines for agricultural products (applied by Landwirtschaftskammer Niedersachsen, Germany)
- Mobile poultry coops (applied by Landwirtschaftskammer Niedersachsen, Germany)
- Replace meat with oyster-mushroom stems (applied by Natuurlijk Vleespakket, Netherlands)

Non-technological innovations:

- Hermeneus online marketplace (applied by Hermeneus World, Spain)
- Lead user approach (applied by Alce Nero, Italy)
- Method for setting common goals in SFSCs and networks (developed in the TRUEFOOD project)
- Common tradenarj system (applied by Éltető Balaton-felvidék Association, Hungary)

3. General value propositions of the SFSCs

1. Fresh, tasty, natural, specific high quality, distinguishable, produced/processed responsibly, traditional – **Food quality and value**
2. Genuine, authentic, non-manipulated, protected with particular care from (chemical) contaminations associated with the global food supply, organic, transparent, not adulterated – **Food safety from a safe, assured source**
3. Fresh, high nutritional value, natural – **Nutrition, health, and well-being**
4. Less transport and distribution, local supply, less Greenhouse Gas (GHG) emissions, less distribution cost, the fairer price for producers, social responsibility in food production (less use of chemicals, less environmental impact from technologies, no GMO), and in employing underprivileged, disabled people, consumer empowerment – **Sustainability, resilience and food security**
5. Local, supporting the local community, long term viability – **Sustainability, resilience, and food security**
6. A potential place to learn about food production, about nature, place to educate children through playing – **Skills and knowledge**
7. Specific diet trends from local plant-based food production, e.g. vegan, vegetarian - **Innovation, Nutrition, health and well-being**



4. Success Factors in the context of SFSCs

The list of success factors in the context of INDIVIDUAL STEPS OF SFSCs:

- high-quality local product
- fresh and natural product
- sustainable production and animal welfare
- authenticity, traditionality, cold-resistant
- diverse selling points, accessibility
- good marketing positions on local and international levels
- low transaction costs and fair price
- a steep increase in the interest to purchase from local, regional sources by consumers as a consequence of the COVID-19 epidemic

The list of typical success factors in the context of the SFSCs AS A WHOLE:

- authentic, local, traditional, and quality products
- sustainable production
- organic production
- strong profile on social media and transparency
- accessible and fair communication with consumers: website, social media
- a joint brand of the producers
- promoting healthy and sustainable eating habits and diets
- following the current food trends
- food chain management and networking
- employment of disabled and handicapped people
- joint marketing: logo, website, presence in events
- interaction with different partners: e.g. agritourism
- exploiting, combining fragmented and complementary resources to achieve strategic objectives
- operating a uniform quality assurance system
- close communication with members
- strategic collaboration with different institutions (e.g. territorial collaboration for developing territorial food systems)
- solidary participation of producers and consumers
- sharing economic responsibility
- experience and education, shared learning, and innovation
- well known in the local community
- acting as an interface for matching supply offer of SFSCs with customer demand

5. Typical problems and needs of SFSCs

The list of typical bottlenecks in the context of INDIVIDUAL STEPS OF SFSCs:

- **lack of expertise:** difficulties in achieving a good quality of raw materials, lack of expertise not just in quality, but in production methods, product development, adaptation of new technologies, marketing, etc.
- **the unpredictability of the weather:** in one-year surplus of products, in another year lack of raw material, high risks of drought, heavy rainfall, frost, or hail
- **lack of knowledge about farming and technology:** challenging to find and apply innovative solutions
- **perishable goods:** there is no effective post-harvest technology
- **ensuring the cold chain by cost-effective solutions:** from farm to final consumer
- **limited availability of technological systems**
- **limited availability of innovative solutions**
- **lack of knowledge about technology on the part of the producers:** it is difficult for them to identify the exact technological problems and solutions
- **lack of investment in storage technology**
- **low negotiation power with prominent retailers and big service provider companies**
- **the supply is not always matching the demand**
- **limited knowledge about the demand for new or traditional products**
- **seasonality:** fluctuating product volume and quality
- **match consumer needs and expectations:** the supply not always operates the demand-driven system
- **lack of reliable information on local products and local production:** consumers have less information
- **prices:** consumers compare the prices of the SFSCs' products to the conventional ones

The list of typical bottlenecks in the context of the SFSCs AS A WHOLE:

- **low adaptability with the changing demands**
- **complex segmentation of niche products:** a limited number of possible customers
- **communication skills of the producers:** producers are not able to communicate the authenticity and transparency of the products effectively
- **price:** consumers refuse the higher price of SFSCs
- **lack of product variety:** limited choice
- **the volume of production:** not satisfactory large enough to be able to manage the high costs of quality systems/labels
- **limited marketing budget**
- **weak marketing activities**

- **weak marketing and communication tools:** cannot reach consumers continuously and effectively
- **limited knowledge about target consumer groups**
- **lack of understanding for differentiation of the products and services from the conventional chains:** lack of knowledge about the value for money concept
- **lack of knowledge of food chain management**
- **low adaptability to changing demands**
- **lack of cooperation and low level of networking**
- **high costs of production, transport, marketing due to smaller volume**
- **individual producers alone are not able to introduce innovations separately**
- **generational gap:** innovativeness, limited ambitious mentality, lack of open-mindedness, and new ideas
- **lack of combined use of the complementary resources, competencies, capabilities**
- **cooperative philosophy:** complicated and slow decision making
- **competition:** the actors of SFSCs fall behind in the competition
- **limited knowledge and experience in how to manage and develop human resources**
- **lack of professional staff for the design and operation of business model**
- **lack of business models for recruitment and human resources management**
- **lack of understanding and conscious use of the business models as a tool for improvement**
- **the rural development policy:** does not operate as a supporting system for SFSC's actors
- **lack of available financial resources at EU and national level:** barriers to investments and the use of innovative methods
- **the lack of specific legislation for SFSC**
- **different interpretations of the relevant legislation at the EU level**
- **regulations on food hygiene, food information, and various products:** very complex
- **farmers and producers are not able to meet the requirements of the regulations without the help of national and EU institutions**
- **operating food quality systems:** very costly for small-scale producers
- **lack of national regulations for the quality:** in some countries
- **lack of understanding and proper interpretation of the requirements**
- **lack of national regulation on label system on local and traditional products in some countries**

6. Applicable innovations

There are several tools, actions, and methods that the organizations can apply, and there are good examples of the SFSCs, which can be adopted for other businesses. In the SMARTCHAIN project, an Innovation Inventory was developed with 146 applicable technological and non-technological innovations. The innovations can be selected, and the appropriate solutions can be applied by each organization individually.

The Innovation Inventory with the potential solutions is available on the SMARTCHAIN project's website: <https://www.smartchain-platform.eu/en/innovation-inventory>

7. Conclusions

With the step-by-step analysis of the operation of SFSC organizations, it is possible to identify how to develop their value propositions. The analysis was carried out with the participation of the 18 case studies in the SmartChain project, based on the knowledge, experiences of the project partners participating in this task, publicly available information, literature review, results of other projects. The producers of the SFSCs have limited access to resources such as material, infrastructure, technology, technical knowledge, and funding. Not only the resources but lack of information and knowledge of product development skills, advanced technologies, marketing, awareness of public funding opportunities, understanding of and compliance with legal requirements are barriers to the success of the short-chain. Bottlenecks in short chains include limited product volumes, one of the consequences of which is a weak bargaining position vis-à-vis retailers, low bargaining power vis-à-vis intermediaries, and municipalities. Several solutions can be found for the elimination of bottlenecks.

The identified bottlenecks can be traced back to the lack of knowledge of the individual producers on technology, marketing, and food safety. Most of the farmers/producers have limited knowledge of IT, which is a barrier to efficient communication among the actors of the short food chain and to access the consumers.

There are several good examples of the cooperation of the peers of the SFSCs. The current value proposition of SFSCs generally offer locally produced products (fresh fruit and vegetable, honey, juices, jams, wine, meat products, dairy products, bakery products, etc.) and, in some cases, special services to residents and tourists of the region. Some of them are organizing open days and events on the farms throughout the year. Information about the dates and programs announced by the short chains is available on the operating website of the organizations. Further reasonable solutions, methods, tools, and activities for developing the operation of the short chains can be found in the Inventory of technological and non-technological innovations developed within the SMARTCHAIN project.

Through differentiation from the other competitors in the food system and applying the value for money concept, the short food chain organizations can be developed, can be more competitive, and the consumers' purchase can be increased. Based on this method, the possible strategy can be built, and the action plan to achieve the strategy for development.

The method developed was applied for the 18 case studies of the project, and it is suitable and works in improving the development of the short food chain organizations.