Short Food Supply Chains – the Case Study of Particular Enterprise in SR

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DOI: https://doi.org/10.15414/isd2022.sP.04

Abstract
Short supply chain means a supply chain involving a limited number of economic operators, committed to co-operation, local economic development, and close geographical and social relations between producers, processors, and consumers. It represents a relatively young concept in the Slovak Republic, that is underdeveloped at national level, but has received considerable attention at the international level. The objective of the paper is to evaluate the operation of a selected agricultural enterprise in a short food supply chain based on the example of the case study.

Keywords: Short Food Supply Chains, Rural Development, Regional Products

JEL Classification: Q18, R11, R51

1. Introduction
Short food supply chains (SFSC) represent a relatively young concept in the Slovak Republic, that is underdeveloped at national level, but has received considerable attention at the international level. The SFSC concept uses mainly local human and material resources, which is an essential feature of local economic development, which is based on the endogenous development concept and the internal resources of the locality.

Agriculture is one of the major sectors of the national economy, as well as one of the most important sectors, providing employment opportunities, especially in rural areas of Slovakia. As a sector using mainly local material resources, it plays an important role in the development of local economies. According to Rovný and Nagyová (2007), agriculture also "plays a significant role in the creation of a rural economy that is created outside large cities and forms the primary economy producing material goods, subsequently linked to services, industry and trade". However, as stated by e.g. Ilbery et al. (2004), agriculture “remains as the economic backbone of lagging rural regions with long-established endemic problems, which include geographical remoteness, poor infrastructures, low population densities, limited employment opportunities and poor development capacities”, but according to De Fazio (2016), “implementation of farming methods, which are getting more and more intensive, put pressure on the environment, on the sustainability of the agricultural industrial production process and increase the number of kilometres the goods have to travel in order to be distributed”. As De Fazio (2016) further notes, “the lengthening of the supply chain developed over the last decades – due to the multiplication of intermediaries - has produced effects from an environmental, economic, social and territorial point of view cannot pass unnoticed”. The shortening of the supply chain with its important effects such as “economic gains provided by less transportation” (Rong et al., 2011), but also “the emergence of synergies between agriculture and other rural activities, like tourism and handicraft” (Gralton and Vanclay, 2009),
seems to be a logical solution to the situation. According to Kneafsey et al. (2013), “shortening the number of links in the supply chain results in increased local sales, increased demand for local services, and increased labour markets”. Further study of short supply chains reveals that in this concept the term “local” is endowed with a particular set of values, such as principles of endogenous development, ethical trade, fair treatment of workers, social inclusion, environmental sustainability (Kneafsey et al., 2013).

As the term “short” indicates, there is a significant emphasis put on minimising the distance which the food has to overcome travelling from the producer to the consumer’s table. Consumers don’t need to travel long distances in order to purchase their desired favourite food from the farmer, food producer or processor. Galli and Brunori (2013) stress the importance of SFSC, especially for SMEs, which “are often less competitive in the conventional chains due to their higher costs of production (because of the lack of economies of scale and the different organisation of production processes) and the higher prices” and which can increase their economic viability thanks to the fair access to the market.

Legislation represents the basic tool for public authorities to define qualitative and quantitative characters of SFSC. Legal documents clearly determine basic terms – short supply chains and local markets, on which the support is provided. To allow the demarcation between these two, the quantitative limitations should be defined, taking into account specific geographic features of the area concerned. Last but not least, it is necessary to define the qualitative aspects, especially concerning the hygiene rules and obligations of producers.

Two European legal documents determine limitations of short food supply chains. According to the Article 2, par. m) of the Regulation (EU) No 1305/2013 of the European Parliament and of the Council, "short supply chain": means a supply chain involving a limited number of economic operators, committed to co-operation, local economic development, and close geographical and social relations between producers, processors and consumers. Delegated Regulation (EU) No 807/2014 and Regulation (EU) No 1305/2013 represent the basic European legislation determining SFSC from the point of view of distance and number of intermediaries. In accordance with the Article 11 of the Commission Delegated Regulation (EU) No 807/2014:

- support for the establishment and development of short supply chains, as referred to in Article 35(2)(d) of Regulation (EU) No 1305/2013 shall cover only supply chains involving no more than one intermediary between farmer and consumer;

- support for the establishment and development of local markets, as referred to in Article 35(2)(d) of Regulation (EU) No 1305/2013 shall cover markets for which the rural development programme sets out a kilometric radius from the farm of origin of the product, within which the activities of processing and sale to the final consumer have to take place.

Rural Development Programme of the Slovak Republic 2014-2020 (RDP) sets out the 100 km radius for local market from the place of origin of product or within the territory of Higher Territorial Unit where the enterprise resides.

Specific rules for support of short food supply chains are defined in the Rural Development Programme of the Slovak Republic 2014-2020 (RDP). In terms of the main priority 3 – Promoting Food Chain Organisation, Including Processing and Marketing of Agricultural Products, Animal Welfare and Risk Management in Agriculture, the RDP defines conditions for support of actors within SFSC, addressing focus areas 3A – improving competitiveness of primary producers by better integrating them into the agri-food chain through quality schemes, adding value to agricultural products, promotion in local markets and short supply circuits,
producer groups and organisations and inter-branch organisations, 6A – facilitating diversification, creation and development of small enterprises, as well as job creation and 6B – fostering local development in rural areas.

The support especially concerns investments into properties in terms of selling and processing agricultural products, starting the production of new and traditional products, introduction of new technique / technologies, and creation of small places for selling agricultural products. The support is provided within the Measure 4 – Productive investments, sub-measure 4.2 – Support for investments for processing/placing on the market and/or developing agricultural products.

Horizontal and vertical cooperation of farms organised in SFSC, cooperation between SFSC actors when creating logistic platforms for promotion of SFSC and local markets, and dissemination activities can be supported, too. Farmers and producers / processors of agricultural and food products can be supported within the sub-measure 16.4 – Support for horizontal and vertical cooperation between the supply chain actors in setting up and developing short food supply chains and local markets and for promotional activities in the local context related to the development of short food supply chains and local markets. The support is focused on activities, such as creation of studies or plans concerning the SFSC and local markets development, recovery of the relevant logistic platform, resp. the SFSC or local market, measurements and tests of relevant samples, operating costs for the business plan implementation, rental costs directly linked to the implementation of logistics platforms, short food supply chains or local markets (all for merchandise-like outlets – classical, mobile or portable or stand-alone) and promotion and marketing costs.

The objective of the paper is to evaluate on the example of a case study the operation of a selected agricultural enterprise in a short food supply chain.

2. Data and Methods

When selecting an enterprise for the collection of primary data, we proceeded in accordance with the quantitative criteria on the basis of which short supply chains are defined within the RDP:

- a radius of 100 km from the place of origin of the product or as the territory of a higher territorial unit in which the enterprise of origin of the product is located for the local market within which the farmer provides his products to consumers,

- a maximum of one intermediary between the farmer and the consumer,

- Agricultural Paying Agency (Summary overview of the RDP SR 2014 – 2020 project measures) for 2017 and 2020. For the sub-measure 16.4 Support for horizontal and vertical cooperation between the supply chain actors in setting up and developing short food supply chains and local markets and for promotional activities in the local context related to the development of short food supply chains and local markets, we collected the data for the following indicators: number of accepted applications for grant, total requested grant, number of approved projects, total approved grant and contracted percentage. Additionally, in the „beneficiaries section“, we monitored the amount of individual types of direct payments approved to some enterprises in 2017, 2018 and 2019.

- Register of Financial Statements of the Ministry of Finance of the Slovak Republic, where from the financial statements of the monitored enterprises, we monitored data on the
following indicators for the current accounting period: operating income, operating expenses and profit/loss from operations.

3. Results and Discussion

As an example of good practice we have chosen the company TBS, a.s. (hereinafter referred to as the company), which operates in the municipality of Podkylava belonging to the Kopanice region. We have focused on this company for the following reasons:

- the company has been developing integrated cooperation with another entity in a short supply chain based on the family partnership for a long time (since 2013),

- the company does not have more than 9 employees for agricultural production during the whole monitored period and the net turnover does not exceed 2 mil. EUR. In accordance with Article 2 of the Annex I to the Commission Regulation (EU) No 182/2011, 651/2014 of 17 June 2014 for a certain part of the aid as compatible with the internal market under Articles 107 and 108 of the Treaties classifies micro-enterprises.

The company was founded in 1998 as a joint-stock company with two subsidiaries - Radvaň Limited Liability Company, Nová Bošáca and Stará Turá Private Hotel Academy. The company gradually grew and from 1997 it began to focus on animal production (Charolais cattle breeding). It currently consists of four main parts:

1. Farm (crop and livestock production), returned for sale from the yard
2. Agropension Adam
3. Regional processing plant of fruit, chocolate, craft brewery
4. Agrotourism (except agropension) - children's summer camps, bike paths.

The company is based in Stará Turá (Nové Mesto nad Váhom district), but agricultural production is concentrated on a farm in Podkylava in the Myjava district, in the Trenčín region.

Within agricultural production, the company applies production methods, i.e. primary production and processing. According to the statistical classification of economic activities in the European Community, NACE, the main activity of the holding is focused on dairy farming, specifically on the breeding of meat cattle without marketable milk production. In addition to the activities mentioned above, the company also processes veal into semi-finished products. In the surveyed period of 2010 - 2019, the area on which the company farmed, the amount of farmed animals and the amount of employees in agricultural production gradually decreased. Data in the surveyed period are presented in the Table 1. The stated amount of employees refers only to employees in the agricultural production.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Area (ha)</td>
<td>315</td>
<td>315</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>275</td>
<td>275</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>Amount of animals</td>
<td>150</td>
<td>150</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>125</td>
<td>125</td>
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<td>125</td>
</tr>
<tr>
<td>Amount of employees</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<td>5</td>
</tr>
</tbody>
</table>

Source: TBS, a.s., own processing
As part of the secondary data obtained from the Register of Financial Statements, the Table records revenues from economic activity, costs of economic activity, profit from economic activity and revenues from sales of the company's own products in the surveyed period.

Table 2: Development of economic data of the company in the surveyed period

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenues from economic activities</th>
<th>Costs of economic activity</th>
<th>Economic result from economic activities</th>
<th>Sales of own products</th>
<th>Direct Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1 827 448</td>
<td>1 359 662</td>
<td>467 786</td>
<td>1 112 120</td>
<td>44 856</td>
</tr>
<tr>
<td>2011</td>
<td>986 597</td>
<td>950 864</td>
<td>35 733</td>
<td>561 056</td>
<td>48 938</td>
</tr>
<tr>
<td>2012</td>
<td>1 176 068</td>
<td>1 116 721</td>
<td>59 347</td>
<td>599 213</td>
<td>52 185</td>
</tr>
<tr>
<td>2013</td>
<td>1 004 423</td>
<td>976 649</td>
<td>27 774</td>
<td>17 711</td>
<td>56 562</td>
</tr>
<tr>
<td>2014</td>
<td>984 415</td>
<td>959 430</td>
<td>24 985</td>
<td>10 346</td>
<td>61 671</td>
</tr>
<tr>
<td>2015</td>
<td>956 988</td>
<td>971 662</td>
<td>-14 674</td>
<td>10 963</td>
<td>103 409</td>
</tr>
<tr>
<td>2016</td>
<td>902 435</td>
<td>860 402</td>
<td>42 033</td>
<td>13 643</td>
<td>105 462</td>
</tr>
<tr>
<td>2017</td>
<td>949 490</td>
<td>924 089</td>
<td>25 401</td>
<td>9 686</td>
<td>107 376</td>
</tr>
<tr>
<td>2018</td>
<td>813 495</td>
<td>793 557</td>
<td>19 938</td>
<td>18 498</td>
<td>109 618</td>
</tr>
<tr>
<td>2019</td>
<td>756 962</td>
<td>787 987</td>
<td>-31 025</td>
<td>9 426</td>
<td>107 795</td>
</tr>
</tbody>
</table>

Source: Register of Financial Statements of the Ministry of Finance of the Slovak Republic, Agricultural Paying Agency

In the table, we also monitor the primary data, namely the amount of direct support in the period under review, which we obtained partly from the questionnaire and partly from the available database of Agricultural Paying Agency.

All indicators (except of direct payments) in the surveyed period had a declining trend, which can be rationally explained by shifting part of production and sales to a partner (which owns a fruit processing plant) within the short supply chain, as well as reinvesting funds in production by repairs and maintenance.

As part of the project measures, the company drew support in the previous programming period. Within the Rural Development Program of the Slovak Republic 2007 - 2013, the company drew support for measures 1.1 Modernization of farms, 1.2. Adding value to agricultural and forestry products, 2.3. Agri-environment payments: Subsidies for organic farming and 3.1. Diversification towards non-agricultural activities. Within the Rural Development Program of the Slovak Republic 2014 - 2020, the company submitted to the call no. 6 / Rural Development Program / 2015 for submission of “application for a non-repayable financial contribution” for sub-measure 4.1 Support for investments in agricultural enterprises, project for purchase of equipment for animal production. The project was not approved due to the lack of funds. From 2010 to 2014, the company successfully applied for a single area payment and a supplementary national payment for livestock units, from 2015 to 2019 it successfully applied for the following direct payments:

(a) decoupled direct payments
- single area payment,
- agricultural practices beneficial for the climate and the environment,
(b) coupled direct payments
   - payment for fattening selected categories of bovine animals,
(c) aid in connection with Rural Development Program measures
   - agri-environment - climate measure,
   - organic farming,
   - payments for areas with natural or other handicaps.
Receiving these types of payments requires a number of requirements to be met in terms of environmental protection, food and feed safety and animal welfare. The above mentioned facts indicate that the company met the requirements and thus created favourable conditions for the production of quality value-added products.

Operating in a short supply chain
The company sells its products directly at the place of production, as well as at the market in the district town of Myjava, 10 km away. It is active in the "Sales from the Yard" initiative, with the company selling 90% of the total amount of products produced under the initiative in 2017 and 2018 and up to 95% in 2019.
Since 2013, the company has been cooperating within the family partnership with the self-employed farmer Ing. Vojtech Tlčík CSc. within the short supply chain. The cooperation mainly concerns fruit processing and the production of fruit products, with SHR being the owner of the fruit processing plant. Processed fruit products include:
   - apricot, strawberry and cherry jam,
   - plum jam,
   - 100% apple juice,
   - dried fruit and fruit in chocolate,
   - 4 types of unfiltered and unpasteurized beer.
Of these products, the following are marked as traditional specialties guaranteed:
   - plum jam - the product received the SK Quality Mark award,
   - apricot, strawberry and cherry jam - the products are marked with the "Slovak product" logo, which presents products made in Slovakia by Slovak producers.
In 2019, the "KOPANICE regional product" brand was awarded the product Dried fruits in chocolate - apples, plums, pears. Obtaining these product awards is clearly assessed by the company as an advantage. In addition to co-operation in the production of these products, co-operation between the two actors in the short supply chain takes place through the joint marketing of products as well as through the creation of joint business plans. The cooperation in the short supply chain also includes local self-employed farmers, mainly fruit and vegetable growers, directly in the village, but also in the Kopanice region, from which the company buys fruit and vegetables at reasonable prices. The company generally considers cooperation in the short supply chain to be advantageous, with the following benefits:
   - improving product sales,
   - production of better quality products and value-added products,
- introducing innovations in production,
- lower production costs.

In addition to the advantages in business, the company (or its statute) also positively evaluates the social situation of its family, respectively confirms its improvement, which is reflected in particular in:
- increasing family and staff incomes,
- improving social status in the circle of friends,
- making new friends,
- strengthening mutual trust with customers - permanently stocked by more than 1000 families in the veal area,
- improving the overall social situation of the whole family and families of employees.

Cooperation of both entities within the short supply chain, i.e. production of products and their sale, take place in the village Podkylava and directly affect it. The company evaluates this impact positively, while the main benefits in favour of the municipality are:
- new job opportunities - this is mainly seasonal work related to hay harvesting and fruit harvesting, mainly in the local population,
- by creating new professions - in addition to investing in innovation and technology in production, the company also invests in human resource development. In cooperation with National Agricultural and Food centre – Food Research Institute, Department of Technology, Innovation and Cooperation with Practice - The BIOCENTRUM Modra department plans to create a so-called "Farm houses" aimed at supporting young, talented people to prepare them for specific professions (e.g. breweries),
- new forms of business - these are mainly relaxation activities, especially for visitors to the region, respectively municipalities, which consist of e.g. the lease of a company brewery, where visitors led by a brewer (a graduate of a newly created profession) can brew their own beer,
- the formation of new types of services - the company plans in cooperation with Trenčín Self Governing Region to create a pedagogical centre in order to create educational programs for managers (e.g. in the field of waste treatment).

It is necessary to take into account the fact that the company was not an applicant for support under school programs or under sub-measure 16.4 of the Rural Development Program of SR 2014-2020. However, the support was obtained by a partner entity (self-employed farmer) within the short supply chain, under sub-measure 4.2, namely for the purchase of beer production technology in the amount of 112,050 EUR and for the construction of a fruit and vegetable processing and storage facility in the amount of 915,431.17 EUR. The support was provided under the call no. 8 / Rural Development Program / 2015, the contracts for the provision of support entered into force in 2016. Thus, the company itself did not invest in innovations and modernization of joint production, but within the short supply chain, the partner entity did so through the support from the Rural Development Program.
4. Conclusion

Based on the analysis of available primary and secondary data, we can evaluate the operation of TBS, joint stock company in the short supply chain only positively. Despite the declining trend in the result of economic activity, the company continues to successfully cooperate with a partner entity, while one of the successes in 2019 was the award of the brand "KOPANICE regional product" with the product of dried fruits in chocolate - apples, plums, pears. The company is the recipient of direct payments, both separate and coupled, as well as aid in connection with RDP measures. In 2016, the partner entity (self-employed farmer) received support under the sub-measure of the Rural Development Program of the SR 2014-2020 for the purchase of technologies and construction of operations. In terms of the added value of products in the short supply chain, both the company and self-employed farmer contribute to improving product quality, both by respecting environmental, food safety and animal welfare requirements and by introducing innovations in production, which resulted in the award of the SK Quality Mark and the Regional quality mark to the selected product. The company evaluates its operation in the short supply chain as advantageous, for the benefit of its own business, for the benefit of the municipality in which the cooperation takes place, as well as for the benefit of its own family, where there is an improvement in its social situation.

Acknowledgements

This paper was prepared with the support of the Erasmus+ Jean Monnet project “Centre of Excellence for European Agri-Food Chain—CEEAG” No. 611446-EPP-1-2019-1-SK-EPPJMO-CoE. The European Commission support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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