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Slovak agricultural enterprises in short food supply chains - evaluation of economic aspects

Pôsobenie poľnohospodárskych podnikov v SR v krátkych dodávateľských reťazcoch - zhodnotenie ekonomických aspektov

Norbert FLORIŠ (✉), Pavol SCHWARCZ

Slovak University of Agriculture in Nitra, Faculty of European Studies and Regional Development, Trieda Andreja Hlinku 2, 94976 Nitra, Slovakia

✉ Corresponding author: norbert.floris@uniag.sk

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ABSTRACT

Increasing the competitiveness of primary producers and supporting the local development in rural areas were one of the main objectives of the Slovak government within the 2014-2020 program period. Supporting local producers and applying short food supply chains were the main tools for fulfilling these objectives. Short food supply chains are a relatively new concept in Slovakia, associated primarily with the sale of the quality agricultural products directly from the farm. The paper focuses on the evaluation of the performance of agricultural enterprises in Slovakia in the short food supply chains by comparing the economic indicators of enterprises in and outside the short food supply chains over a period of 10 years. This time period captures a relatively stable development of the economic results of enterprises, with a slight increase in 2017, when the enterprises concluded contracts with the Agricultural Paying Agency. This year is considered to be the start of the enterprises in the short food supply chains, providing the results in terms of the observed economic indicators significantly different from the enterprises outside the short food supply chains due to their size and economic power. In connection with the above facts, we have identified the following research questions: 1) Is the size of the agricultural enterprise a factor that influences the success of companies in short food supply chains? 2) Are micro and small agricultural enterprises operating in short food supply chains able to improve their economic results despite their disadvantages compared to large enterprises?

Keywords: direct sale, farmers, producers, micro-enterprises, small and medium enterprises, economic indicators

ABSTRAKT

Zvýšenie konkurencieschopnosti prvovýrobcov a podpora lokálneho rozvoja vo vidieckych oblastiach boli jednými z hlavných cieľov slovenskej vlády v rámci programového obdobia 2014 - 2020, pričom hlavnými nástrojmi na naplnenie daných cieľov bola podpora lokálnych výrobcov a uplatňovanie krátkych dodávateľských reťazcov. Krátke dodávateľské reťazce sú na Slovensku relatívne nový pojem, spájaný predovšetkým s predajom kvalitných poľnohospodárskych výrobkov priamo z farmy. Článok sa zameriava na zhodnotenie pôsobenia poľnohospodárskych podnikov na Slovensku v krátkych dodávateľských reťazcoch prostredníctvom porovnania ekonomických ukazovateľov podnikov v krátkych dodávateľských reťazcoch a mimo nich počas obdobia 10 rokov. Toto časové obdobie zachytáva relatívne stabilný vývoj hospodárskych výsledkov podnikov s miernym nárastom v roku 2017, keď podniky uzavreli zmluvy s Pôdohospodárskou platobnou agentúrou. Tento rok sa považuje za začiatok činnosti podnikov v krátkych dodávateľských reťazcoch, pričom ich výsledky v rámci sledovaných ekonomických ukazovateľov sú aj vplyvom ich veľkosti a ekonomickej sily výrazne odlišné od podnikov mimo krátkych dodávateľských reťazcov. V súvislosti s uvedenými skutočnosťami sme stanovili nasledujúce výskumné otázky: 1) Je veľkosť poľnohospodárskeho podniku faktor, ktorý vplýva na úspešnosť pôsobenia podnikov v krátkych dodávateľských reťazcoch? 2) Sú mikropodniky a malé poľnohospodárske podniky pôsobiace v krátkych dodávateľských reťazcoch schopné zlepšiť svoje hospodárske výsledky napriek nevýhodám oproti veľkým podnikom?

Kľúčové slová: priamy predaj, farmári, spracovatelia, mikropodniky, malé a stredné podniky, ekonomické ukazovatele

INTRODUCTION

In the Rural Development Program of the Slovak Republic 2014 – 2020, the Government of the Slovak Republic introduced an ambitious plan to increase the competitiveness of primary producers and to support the local development in rural areas in Slovakia. Improving the position of local producers in the domestic market and applying the short food supply chains (SFSC) are the key aspects of this plan. The emphasis is also put on increasing the share of domestic production with higher added value through high quality products, innovations, regional and local specialties, etc.

Short food supply chains represent a new approach in the Slovak Republic. The rapid evolvement of short food supply chains in recent years has brought a wide scale of terms and definitions within the European and a global context, as well. Short food supply chains are based on their capacity to re-socialize or re-spatialize food, thereby allowing the consumer to make value-judgements about the relative desirability of foods based on their own knowledge, experience, or perceived imagery (Marsden et al. 2000). The SFSC concept is more specific than alternative food networks, and, rather, covers (the interrelations between) actors who are directly involved in the production, processing, distribution, and consumption of new food products (Renting et al., 2003). The benefits of the SFSC are perceived on three levels – social, environmental, and economic. The economic benefits are equally important from the perspective of the farmer / producer / processor. Shortening supply chain distances can have a positive impact on local sales, employment, and multiplier effects, while the short supply chain itself can become an important component of regional tourism. But as Kneafsey et al. (2013) states, “the relative importance of local sales or SFSC will vary in relation to enterprise size and scale, as well as geographical location (e.g. proximity to urban markets or tourism destinations)”. Galli and Brunori (2013) stress the importance of SFSC especially for small and medium enterprises, 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. From an economic perspective, Malak-Rawlikowska et al. (2019) states that “the participation in SFSC is beneficial for producers since short chains provide a relatively high price premium as they allow a large proportion of margin to be captured, which would otherwise be captured by different intermediaries”. Mancini et al. (2019) also confirms that “the SFSC produces social and environmental as well as economic benefits”, however, according to Popp et al. (2018), coordinated support for SFSC embracing a competition policy, well-targeted financial support for local food processors and promotion of local producers’ cooperatives would be highly desirable to defend the interests of small and medium-sized local producers. In conditions of the Slovak Republic, the SFSC are supported through the Rural Development Program (RDP). The intention is to maintain and improve the position of food producers on the domestic market, while in terms of the implementation of domestic production is increasing the importance of local and regional markets, where supply and demand are concentrated. By applying short supply chains, it is possible to reduce trade and distribution costs and significantly support the income of primary producers, therefore it is recommended to support the sale of production through direct sales from the farm.

The aim of this paper is to evaluate agricultural enterprises in SFSC, comparing their economic results with companies outside the SFSC, within the reference period of 10 years (2010 – 2019). The evaluation is made on the sample of 43 micro, small and medium agricultural enterprises. The results of the survey focused on how the farmers perceive the SFSC are involved in the evaluation to get a more precise overview on the agricultural enterprises' success in the SFSC.

MATERIAL AND METHODS

As mentioned in the introduction, the position of the micro, small and medium enterprises in the conventional food chain predetermines them to be facing more serious obstacles than the large companies. The problem lies in their high production costs and in the prices they sale their products for. However, they represent a huge potential for innovation in the organization of the food chain, while the EU doses millions of small farmers with a massive support by the Common Agricultural Policy.

When collecting data, the focus was primarily on micro and small enterprises, as we assume that by providing products to local customers their products achieve higher added value due to higher quality. Their size was determined according to the number of employees, in compliance with the Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, as follows:

- Microenterprise – an enterprise which employs fewer than 10 persons,
- Small enterprise – an enterprise which employs fewer than 50 persons,
- Medium enterprise – an enterprise which employs fewer than 250 persons.

The enterprises were selected for the collection of primary data in accordance with the quantitative criteria on the basis of which short supply chains are defined within the RDP, as follows:

- 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 holding 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.

The focus was on enterprises that sell their products directly to consumers. From the point of view of cultivated and processed crops, as well as the products offered, the focus was on primary producers / processors of fruit, vegetables and milk and dairy products. The primary data collection was made through the questionnaire, whereby all applicants for a grant within the sub-measures 4.1 Support for investment into agricultural enterprises, 4.2 Support for investments for processing/placing on the market and/or developing agricultural products and 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, under the RDP and under the School Milk and School Fruit and Vegetables schemes were interviewed. The results are presented in more details in the chapter Results and discussion.

The secondary data was gained from the following resources:

- Agricultural Paying Agency (2021) – in terms of 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 percentage of concluded contracts was followed,
- Register of Financial Statements of the Ministry of Finance of the Slovak Republic (2011) – the following items in the income statements were followed: profit/loss from operations and revenue from the sale of own products which provides a better insight into how the SFSC affects the sales of the products.

There were 43 agricultural enterprises investigated within the reference period 2010-2019, i.e. 10 years. This provides a huge number of values which is disarranged and the simplification in displaying the data in charts is needed.

Because the development of economic results in time is observed (the X-axis), the aim is to have the time series displayed and the simplification concerns the variables on the Y-axis, where the two variables within the univariate analysis were calculated – the arithmetic mean and the median of profit/loss from operations and revenue from the sale of own products of 43 agricultural enterprises in each year. Values of arithmetic mean and median for each reference year were displayed in charts, separately for profit/loss from operations and revenue from the sale of own products, comparing the companies in and outside of the SFSC. Revenue from the sale of own products per 1 employee was additionally calculated, comparing the enterprises in the SFSC according to their size in each reference year.

RESULTS AND DISCUSSION

As of 31 December 2020, 103 agricultural enterprises applied for support under the Rural Development Programme of the Slovak Republic 2014-2020 sub-measures 4.1, 4.2 and 16.4, while the contract was concluded (i.e. they received the grant) with 40 applicants, which is almost 39% of the total number of applicants. Table 1 shows that 9 applicants out of this number were investigated. 17 investigated applicants were granted to supply the primary schools within the school schemes, where 14 applicants were granted within the School fruit and vegetables scheme and 3 applicants were granted within the School milk scheme. 17 applicants received no grant, as they did not meet the conditions of the call for proposals.

The sub-measure 16.4 directly supports the creation of the SFSC or the cooperation among partner enterprises in the SFSC. Productive measures 4.1 and 4.2 especially support the investments into properties in terms of selling and processing agricultural products, starting the production of new and traditional products, introduction of the new technique / technologies, and creation of small places for selling agricultural products. The school programs support the supply or distribution of the milk, dairy products, fruit, vegetables and their products for children and pupils at kindergartens and primary schools. Producers/ processors in the school schemes supply the local schools within the 100 km radius from the place of origin of the product, therefore we consider them to be the enterprises in the SFSC. The participation of enterprises in the survey by the size and the legal type is shown in Tables 2 and 3:

Table 2. Distribution of investigated enterprises in accordance with their size

Size	Micro enterprise	Small enterprise	Medium enterprise
No. of enterprises	13	16	14

Table 3. Distribution of investigated enterprises in accordance with the legal types

Size	Limited liability company	Joint stock company	Cooperative
No. of enterprises	33	6	4

The data in the tables show a relatively balanced distribution of enterprises according to their size. The situation in terms of the legal forms is significantly different, where the limited liability companies dominate. Figure 1 and 2 shows the representation of enterprises in and outside the SFSC by their size and legal form, respectively. While the share of micro-enterprises in the SFSC is lower than in the case of enterprises outside the SFSC, the share of small and medium enterprises in the SFSC is much higher and balanced, where both groups are represented by 11 enterprises. Concerning the legal types of enterprises, the share of the limited liability companies

Table 1. Distribution of investigated enterprises in accordance with the grant schemes

	In the SFSC		Outside the SFSC
Sub-measure/scheme	4.1, 4.2 and 16.4	School schemes	No grant
No. of enterprises	9	17	17

is significant and is higher in the case of enterprises in the SFSC (19 enterprises) than in the case of enterprises outside the SFSC (14 enterprises). The share of the joint-stock companies and cooperatives is much lower. The share of both types is higher in the case of the enterprises in the SFSC (4 joint-stock companies and 3 cooperatives).

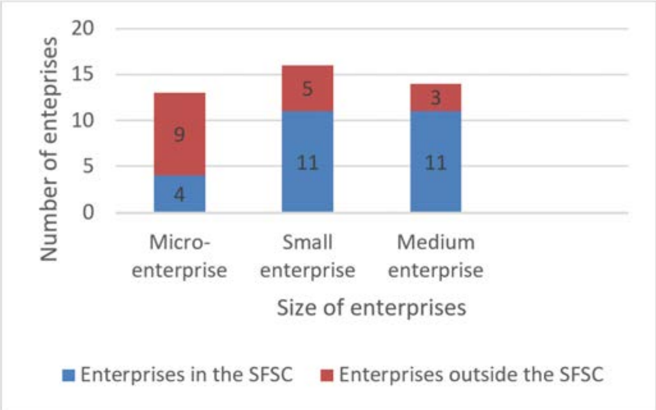

Figure 1. Distribution of enterprises according to their size in and outside the short food supply chain (SFSC)

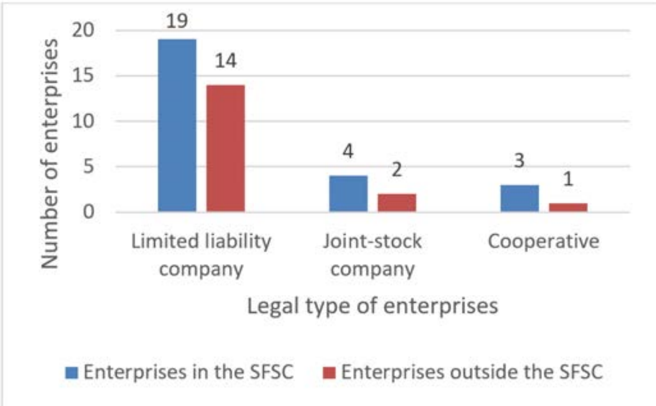

Figure 2. Distribution of enterprises according to their legal type in and outside the short food supply chain (SFSC)

Figures 3, 4, 5 and 6 compare the economic results – profit/loss from the operations and the revenue from the sale of own products of enterprises in and outside the SFSC, using the arithmetic mean and the median, respectively. The comparison captures the 10-years' period progress of an arithmetic mean and a median of both economic indicators. Figure 3 shows a relatively balanced progress of arithmetic mean of profit/loss from operations of enterprises in and outside the SFSC in the entire observed period. Figure 4 shows a balanced progress of arithmetic mean of the revenue from the sale of own products in the observed period.

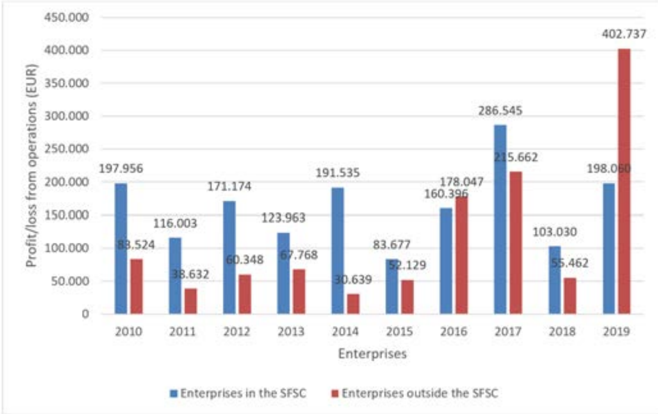

Figure 3. Comparison of the arithmetic mean of the profit/loss from operations of enterprises in and outside the SFSC in the period 2010-2019

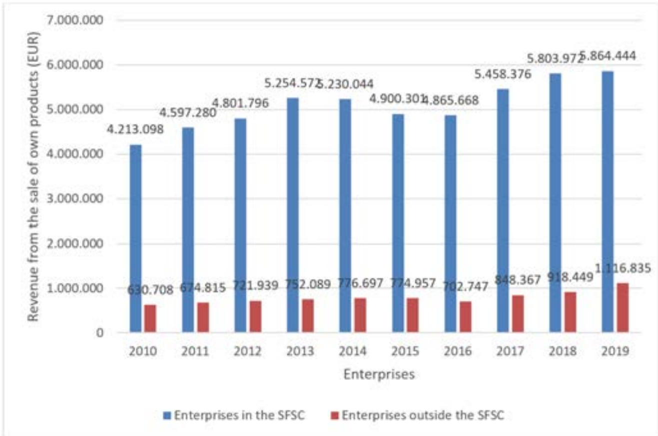

Figure 4. Comparison of the arithmetic mean of the revenue from the sale of own products of enterprises in and outside the SFSC in the period 2010-2019

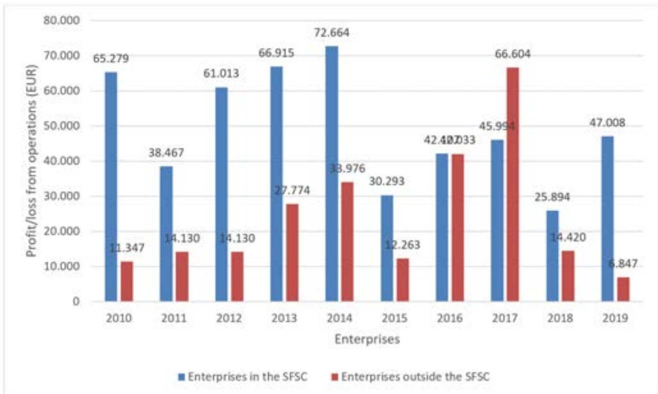

Figure 5. Comparison of the median of the profit/loss from operations of enterprises in and outside the SFSC in the period 2010-2019

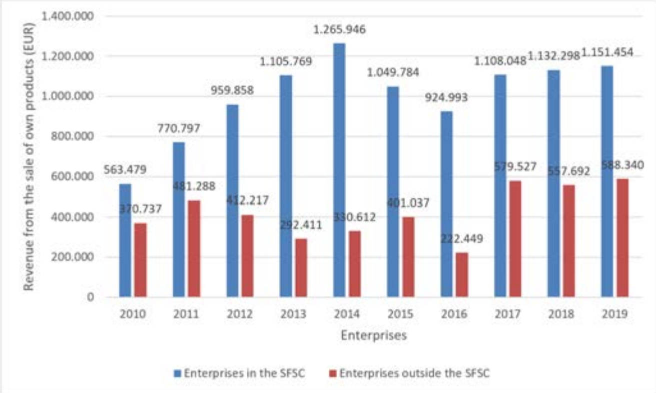

Figure 6. Comparison of the median of the revenue from the sale of own products of enterprises in and outside the SFSC in the period 2010-2019

There is, however, a slight increase in the last 3 years, i.e. in 2017, 2018 and 2019. Most of the enterprises concluded support contracts with the Agricultural Paying Agency under the above-mentioned sub-measures and school schemes in 2017. It indicates that the increase in the mentioned indicator in the last three years could be influenced by the entry into the SFSC. Figure 5 and 6 shows a comparison of both indicators through the median.

Revenue from the sale of own products provides a much better overview of how the enterprises performed in and outside the SFSC during the observed period. Figure 4 shows that this indicator is incomparably higher in enterprises in the SFSC, with the size of the enterprises playing a major role.

As shown in the Figure 1, while the enterprises outside the SFSC were represented mainly by the microenterprises (53%), the enterprises in the SFSC were mainly represented by small and medium enterprises (both 42%). The economic power of especially medium enterprises is incomparably higher that of the micro-enterprises. This explains, why the arithmetic mean of the revenue from the sale of own products of enterprises in the SFSC differs so significantly from those outside (Figure 4). This statement is also confirmed by a comparison of enterprises in both groups through the median (Figure 6) and through the arithmetic mean of revenue from the sale of own products calculated per 1 employee according to the size of enterprises in the SFSC (Figure 7).

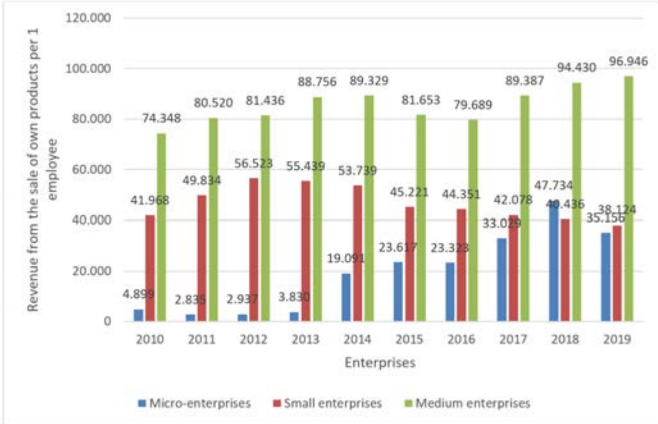

Figure 7. Comparison of the arithmetic mean of the revenue from the sale of own products per 1 employee of enterprises in the SFSC according to their size in the period 2010-2019

Figure 6 shows a slight increase in the revenue from the sale of own products of enterprises outside the SFSC in the last 3 observed years. However, the revenue from the sale of own products of enterprises in the SFSC where the small and medium enterprises dominate, is significantly higher throughout the entire observed period. This observation confirms the statement that the economic size of enterprises is an important factor affecting their economic results, although operating in the SFSC can bring them some benefits. This fact is better visible in Figure 7, where after calculating the revenue from the sale of own products per 1 employee, the dominance of medium-sized enterprises in the SFSC is obvious. Figure 7 also shows a significant increase in the revenue from the sale of own products per 1 employee of micro-enterprises in the SFSC in the last 3 observed years, indicating that despite of their size, low number of employees and low economic power, micro-enterprises can use the benefits provided by the SFSC to improve their economic results.

In support of the mentioned statements, the primary data was collected through a questionnaire. The respondents were asked if they perform in the SFSC or not. In the case of a positive response, they were asked the following questions:

a) What is the form of your cooperation with other enterprises in the SFSC?
b) What benefits brings the SFSC to your business?

c) How did the performance in the SFSC improve the social situation of you and your family?

Responses to first two questions are shown on Figures 8 and 9. Most of the questioned enterprises prefer the cooperation in the form of joint marketing activities (34%), while the better marketing of their products perceives 45% of respondents as the best benefit from the SFSC. All questioned enterprises consider the increase of their income to be the only improvement of their social situation and of their family.

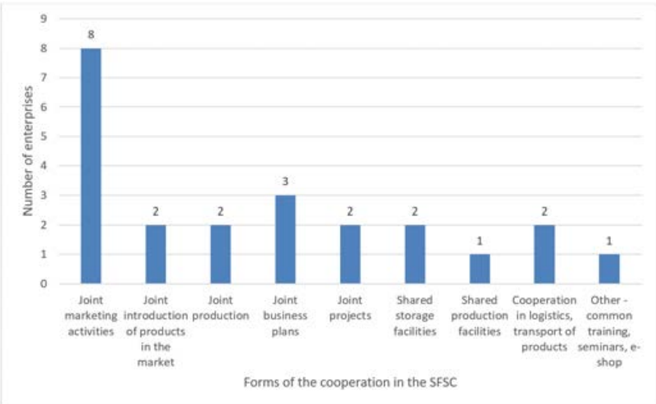

Figure 8. Forms of the cooperation of investigated enterprises in the short food supply chain

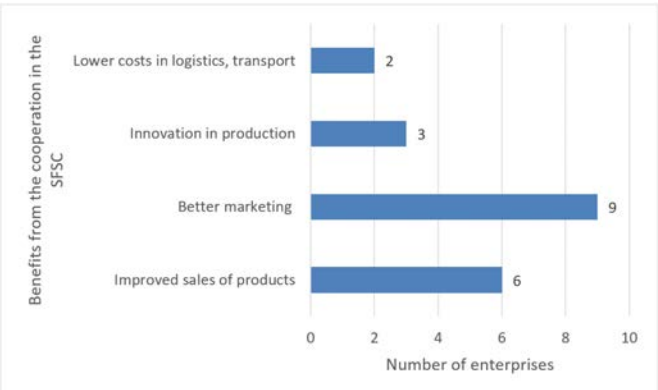

Figure 9. Benefits from the cooperation of investigated enterprises in the short food supply chain

CONCLUSION

The observed 10-year-period shows a relatively stable development of economic indicators of enterprises in and outside the SFSC. A slight increase in the values of the profit/loss from operations occurs mainly since 2017, when most enterprises concluded contracts with the Agricultural Paying Agency and began to draw support for sub-measures 4.1, 4.2 and 16.4, as well as school programs, which we consider to be the beginning of their performance in the SFSC. We observe a much larger difference in the revenue from the sale of own products, the increase of which since 2017 is evident. For this indicator, we observed another important fact, namely that revenues from the sale of own products are incomparably higher in the case of enterprises in the SFSC than in the case of enterprises outside the SFSC. It should be considered here that while the enterprises outside the SFSC were mainly represented by the micro-enterprises (53%), 42% of small enterprises and 42% of medium-sized enterprises operated in the SFSC. This points to the following important facts:

- The size of enterprises is an important factor affecting their economic results. Due to a greater economic power, medium-sized enterprises will always have a significant advantage over micro-enterprises, regardless they operate in the SFSC or not.
- Micro-enterprises – although disadvantaged towards medium enterprises due to their size, lower number of employees and lower economic power – can use the benefits provided by the SFSC to improve their economic results.

The veracity of the above statements is also supported by the results of the questionnaire survey. The enterprises generally evaluate their participation in the SFSC positively and they consider the cooperation in the SFSC to be an important factor bringing them a variety of benefits. Joint marketing activities are the most frequent form of the cooperation, while they see the benefits mainly in a better marketing. These facts are very important in the light of the new EU Common Agricultural Policy, where the cooperation is one of the important aspects of the support for agricultural enterprises. In accordance with the Proposal for a Regulation of The European Parliament and of the Council establishing rules on support for strategic plans (COM(2018) 392), the support can entail all aspects of cooperation between at least two entities, such as the promotion of short supply chain and local markets. On this Proposal for a Regulation, the Ministry of Agriculture and Rural Development of the Slovak Republic builds its Strategic Plan of the Common Agricultural Policy 2023 – 2027. The social area is also an important factor, however, the benefits here are perceived mainly through the finance. All respondents state that a social situation of their family improved through the increase in their income.

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