

Acta Regionalia et Environmentalica 1
Nitra, Slovaca Universitas Agriculturae Nitriae, 2019, pp. 1–4

EVALUATION OF SMALL AND MEDIUM-SIZED ENTERPRISES OPERATING IN SHORT SUPPLY CHAINS WITHIN SLOVAK SCHOOL PROGRAMMES

Norbert FLORIŠ*, Pavol SCHWARCZ

Slovak University of Agriculture in Nitra, Slovak Republic

Despite of reduction of its share on the gross domestic product, agriculture remains a branch generating job opportunities in rural areas. However, through more intensive farming procedures, it puts a pressure on environment and sustainability of agricultural production and prolongs the distance of distributed goods. Reduction of the mentioned impacts is possible through shortening the food supply chain subsequently resulting in increase of local sale, demand for local services and increase of labour market, putting an emphasis on support of small and medium – sized enterprises and their economic viability improvement. This paper evaluates the performance of small and medium enterprises and micro-enterprises which applied for the support and supplied and distributed fruits, vegetables, milk and milk products to kindergartens and primary schools within the School Fruits and Vegetables and the School Milk programme. We suppose that through supplying local schools they contributed to the food supply chain shortening.

Keywords: short food supply chains, micro-enterprises, small enterprises, medium enterprises, School Fruits and Vegetables programme, School Milk programme, receipts from sales of own products

In conditions of the Slovak Republic, short food supply chains are a relatively young concept, using mostly local human and material sources. This is a basic character of the local economic development which is based on endogenous development concept and on sources inside the relevant locality. Agriculture is a branch using mostly local material sources; it is among the most important branches in national economy and one of the most important branches providing job opportunities mainly in rural areas of Slovakia. According to Rovný and Nagyová (2007), "agriculture is significantly involved in creation of rural economy that is created outside of large cities and forms the primary material-producing economy, subsequently associated with services, industry and trade". Although the share of agriculture and forestry in both Slovakia's gross domestic product and employment is declining, in rural areas it is one of the few branches that creates jobs. According to Ilbery et al. (2004), agriculture remains the economic backbone of lagging rural regions with "geographical remoteness, poor infrastructures, low population densities, limited employment opportunities and poor development capacities", however, according to De Fazio (2016), "implementation of farming methods, which are getting more and more intensive, puts pressure on the environment, on the sustainability of the agricultural industrial production process and increases the number of kilometres the goods have to travel in order to be distributed". As De Fazio (2016) furtherly states, "lengthening of the supply chain seen in the last decades – through the multiplication of intermediaries – has produced effects

from environmental, economic, social and territorial points of view that cannot pass unnoticed". The emergence of synergies between agriculture and other rural activities, like tourism and handicraft (Gratton and Vanclay, 2009), as well as economic gains provided by less transportation (Rong, Akkerman and Grunow, 2011), are important effects of shortening food supply chains (Sellitto, Machado Vial and Viegas, 2018) which seems to be a logical solution of current 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 market. Although often associated to other concepts such as "local food", "alternative food chains", "local food systems", "direct sales" etc. (Galli and Brunori, 2013), more detailed evidence shows that short food supply chains are different systems with different characters and typology.

Van der Ploeg (2000) defines "new food supply chains as a commonly recurring phenomenon in several fields of rural development centred around distinctive product qualities including organic farming, high quality production and region-specific products". A key characteristic of short supply chains is their capacity to re-socialize or respatialize food, thereby allowing the consumer to make value-judgements about the relative desirability of foods on the basis of their own knowledge, experience, or perceived imagery (Marsden et al., 2000).

According to Kneafsey et al. (2013), "the relative importance of local sales or short food supply chains will vary in relation to enterprise size and scale, as well as

Contact address: Norbert Floriš, Slovak University of Agriculture in Nitra, Faculty of European studies and regional development, Centre of International Programmes, Tr. Andreja Hlinku 2, Nitra 949 76, Slovak Republic, e-mail: Norbert.Floris@uniag.sk

geographical location (e.g. proximity to urban markets or tourism destinations)”, while from the point of view of economic success the author states that farmers and producers “may interpret success not in narrow economic terms, but in terms of their social and environmental contribution”. There is a similar opinion on economic aspects of short food supply chains provided by Galli and Brunori (2013), emphasizing the importance of short food supply chains mostly for small and medium enterprises especially because “they 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 due to a fair access to the market they can increase their economic viability.

Micro-enterprises, small enterprises¹ and medium enterprises are at a significant disadvantage in the conventional food chain compared to large enterprises, mainly because of the high cost of production and the prices they sell their products for. On the other hand, they are an important source of innovation in the food chain, while the aim of the Common Agricultural Policy of the EU is to help ensure the livelihood of millions of small farmers in the European Union while promoting competitive and sustainable agriculture. Particular attention is paid to how small farmers are able to address the growing consumer demand for high-quality and traceable foods that support local economies and communities, as we assume that by providing products to local customers (local consumers, schools, kindergartens, social facilities services), their products achieve higher added value due to their higher quality.

In this paper we evaluate the performance of small and medium enterprises and micro-enterprises within short food supply chains which applied for the support and supplied and distributed fruits, vegetables, milk and milk products to kindergartens and primary schools within the School Fruits and Vegetables and the School Milk programme.

Material and methods

Shortening the supply chain through the supply of fruit, vegetables, and milk and dairy products to local facilities and through the support provided by the Agricultural Paying Agency under the school programs, we assume that successful applicants for support achieved better economic results in the observed period. Data to verify this assumption were obtained from the following sources:

- Agricultural Paying Agency, section Market organisation (<http://www.apa.sk/organizacia-trhu>), within the School Fruits and Vegetables and the School Milk programmes

¹ In accordance 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, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million. A micro-enterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

we gained the list of approved applicants for the school year 2017/2018;

- Register of Financial Statements of the Ministry of Finance of the Slovak Republic – from the financial statements of the monitored enterprises, we gained data on the receipts from sales of own products. We collected the data for enterprises that applied for support under the school programmes, observing the years 2015 and 2016, i.e. two years before the start of supply and distribution of fruit and vegetables, milk and dairy products to school facilities, when we supposed the enterprises did not perform in the short supply chain yet, and in 2017, when we expected enterprises (approved applicants) to begin deliveries to school facilities within the I. delivery period, i.e. from 1 September 2017 to 31 December 2017; Subsequently, we calculated and compared the average value of receipts from sales of own products of the observed enterprises in the given years;
- Agricultural Paying Agency. InfoService. ATIS, Market reports – milk and dairy products (<http://www.apa.sk/mlieko-a-mliečne-vyroby>) – from the market reports on milk and dairy products, we calculated from the individual months of 2015, 2016 and 2017 the average values of average purchase prices of raw cow milk and compared them with the average values of the receipts from sales of own products. The aim of this step was to find out how the average value of the receipts from sales of own products changed in the observed period together with the average purchase price of raw cow milk. The limiting factor when determining the data was their unavailability for 2018.

Results and discussion

The call for tenderers for the supply of fruits, vegetables and their products under the school programme for the school year 2017/2018 was published on May 25, 2017. The call for applicants for activities in the school programme for the school year 2017/2018 (part – school milk) was published on July 31, 2017. The call for approved applicants for activities in the school programme for the school year 2017/2018 for the submission of applications for the allocation of the maximum amount of support for the school year 2017/2018 for both school programmes was published on August 24, 2017. For this school year, the maximum amount of support for 42 applicants under the School Fruits and Vegetables programme and for 9 applicants under the School Milk programme was approved. Applicants were assigned to individual categories of enterprises based on the definition of the Commission Regulation (EU) No. 651/2014, using receipts from sales of own products as a determining indicator for defining applicants to be within the category of the micro, small or medium-sized enterprise. Under the School Fruits and Vegetables programme, 27 micro-enterprises (64%), 11 small enterprises (26%) and 4 medium enterprises (10%) were approved for the support. Under the School Milk programme, the support was approved for 4 micro-enterprises, 3 medium enterprises and 2 large enterprises (Figures 1 and 2). Figures 3 and 4 show the development of the average values of the applicants' receipts

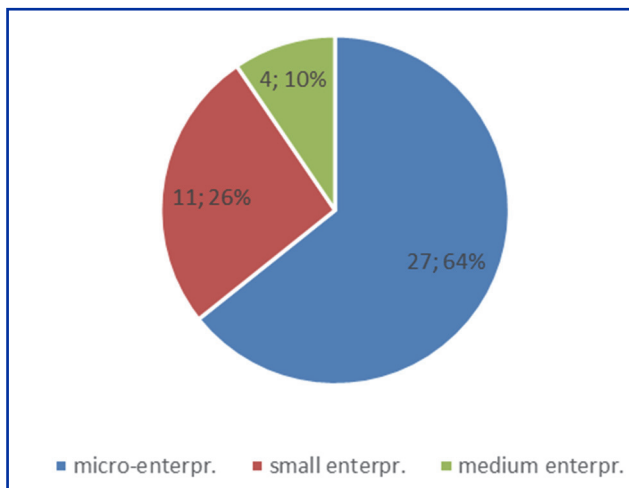


Figure 1 Number of applicants (according to categories of enterprises) approved within the School Fruits and Vegetables programme
Source: Agricultural Paying Agency, 2017

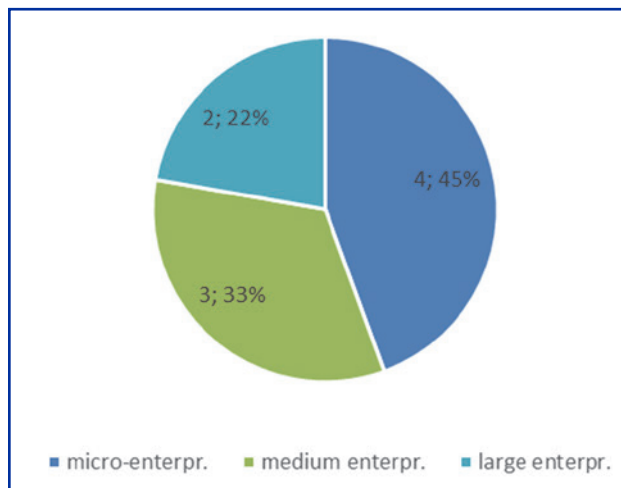


Figure 2 Number of applicants (according to categories of enterprises) approved within the School Milk programme
Source: Agricultural Paying Agency, 2017

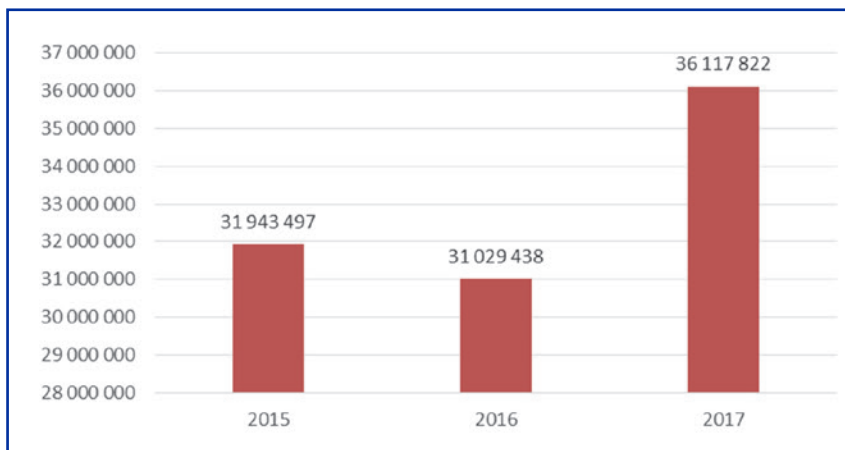


Figure 3 Average values of receipts from sales of own products of enterprises within the School Fruits and Vegetables programme
Source: Ministry of Finance of the Slovak Republic, Register of Financial Statements

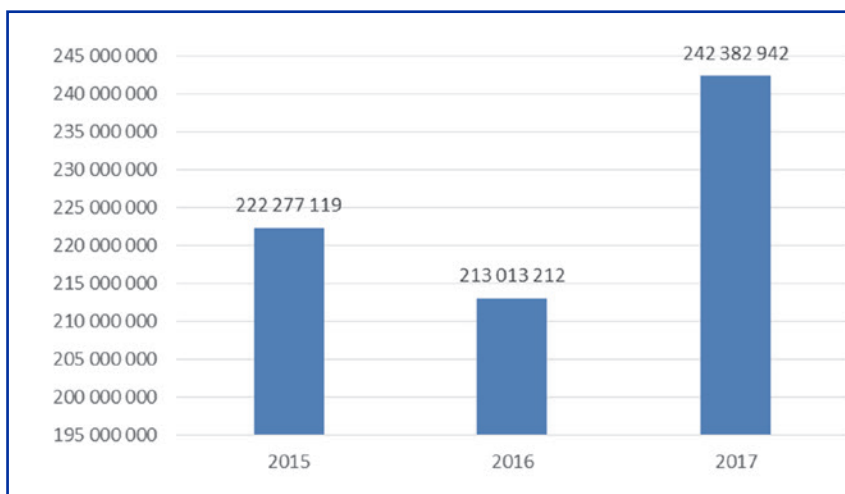


Figure 4 Average values of receipts from sales of own products of enterprises within the School Milk programme
Source: Ministry of Finance of the Slovak Republic, Register of Financial Statements

from sales of own products within the two school programmes, which was unbalanced in the monitored years 2015, 2016 and 2017. While in 2016 there was a drop in sales of applicants approved under both programmes in comparison with 2015, in 2017 they increased by 16.4% in the School Fruits and Vegetables programme and by 13.79% in the School Milk programme. It can be assumed that this increase in sales was related to the supply of fruit, vegetables, milk and milk products to pre-school and school facilities, as we see in Figure 3 and 4. However, these figures may be distorted in certain extent, as other factors may have affected the increase in sales, e.g. the price of the various types of fruit and vegetables that have been delivered to school facilities or the purchase price of raw cow milk. For this purpose, as an example, we calculated the average price of raw cow milk for each reference year from the purchase prices of raw cow milk in the individual months of 2015, 2016 and 2017. The development of these average prices is shown in Figure 5 compared with the development of average value of receipts from sales of own products of applicants approved under the School Milk programme, while the development of both indicators was the same in the observed period. The average purchase prices of raw cow milk decreased in 2016, but in 2017 the average purchase price (compared to 2016) increased by 22.4%.

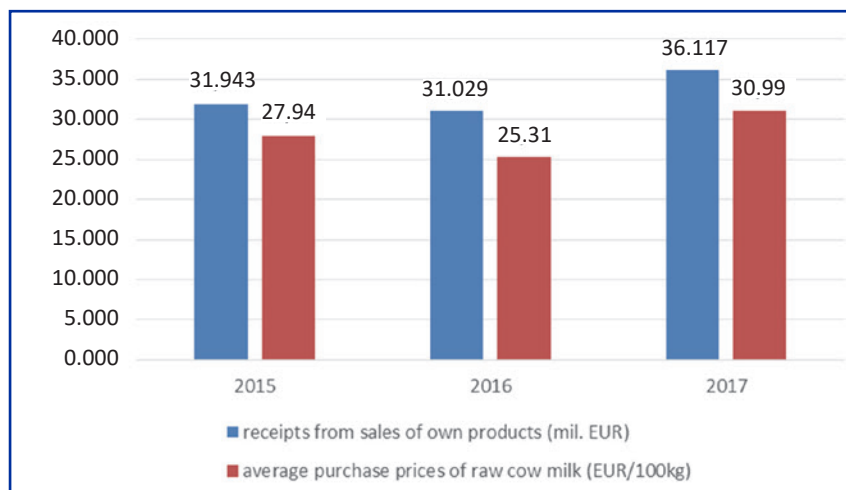


Figure 5 Comparison of development of receipts from sales of own products of enterprises within the School Milk programme and the average purchase prices of raw cow milk

Source: Agricultural Paying Agency

Conclusion

From the achieved results of the work we can evaluate the performance of small and medium enterprises in the short food supply chain through school programmes as generally successful, both in terms of the number of applicants and in terms of receipts from sales of own products. We evaluate very positively the fact that the vast majority of participants in school programmes were micro-enterprises (64% in the case of the School Fruits and Vegetables programme and 45% in the School Milk programme), while in terms of their categorisation in accordance with the Commission Regulation (EU) No. 651/2014, we prefer to consider their annual turnover.

From the point of view of receipts from sales of own products we can state that enterprises supplying the local preschool and school facilities with fruit, vegetables, milk and dairy products under the school programmes, achieved much higher sales in 2017 (by 16.4% in the School Fruits and Vegetables programme and by 13.79% under the School Milk programme compared to 2016), when they already supplied fruit, vegetables, milk and dairy products to kindergartens and primary schools in the 1st delivery period from September 1, 2017 to December 31, 2017. However, it is distorting in this perspective that in order to simplify the process of comparing the individual

years, we calculated the average values from receipts from sales of own products of individual applicants, separately for the School Fruits and Vegetables programme and separately for the School Milk programme, which we then compared. This means that the increase in sales in 2017 did not have to occur for each applicant, while the largest sales of own products in 2017 could be achieved by large companies due to their high economic performance. Other factors could also have an impact on the increase in sales, which was confirmed by comparing the development of average values of receipts from sales of own products under the School Milk programme with the development of the average purchase prices of raw cow milk, where we found that the development of both indicators in the observed period was identical. This finding leads us to the conclusion that performance of an enterprise in the short food supply chain does not necessarily imply an improvement in its economic situation, even with the support of the relevant managing authority (Agricultural Paying Agency for school programmes). It is necessary to take into account other factors which have an impact on its economic performance, e.g. its size (large enterprises in terms of their performance have a more stable position in the market) or the purchase price of the supplied commodity in the market.

References

- AGRICULTURAL PAYING AGENCY. 2017. School Programme Grant (part A – School Fruits and Vegetables, part B – School Milk) for the school year 2017/2018 – Guide for Applicants.
- AGRICULTURAL PAYING AGENCY. <http://www.apa.sk/organizacia-trhu>
- AGRICULTURAL PAYING AGENCY. InfoService. ATIS. <http://www.apa.sk/mlieko-a-mliecne-vyroby>
- 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.
- DEFAZIO, M. 2016. Agriculture and sustainability of the welfare: the role of the short supply chain. In *Agriculture and Agricultural Science Procedia*, vol. 8. 2016, pp. 461–466.
- GALLI, F. – BRUNORI, G. (eds.) 2013. Short Food Supply Chains as drivers of sustainable development. Evidence Document. Document developed in the framework of the FP7 project FOODLINKS (GA No. 265287). Laboratorio di studi rurali Sismondi, ISBN 978-88-90896-01-9.
- GRALTON, A. – VANCLAY, F. 2009. Artisanality and culture in innovative regional agri-food development: lessons from the Tasmanian artisanal food industry. In *International Journal of Foresight and Innovation Policy*, 2008, vol. 5, pp. 193–204.
- ILBERY, B. et al. 2004. Forecasting food supply chain developments in lagging rural regions: evidence from the UK. In *Journal of Rural Studies*, vol. 20, 2004, pp. 331–344.
- KNEAFSEY, M. et al. 2013. Short Food Supply Chains and Local Food Systems in the EU. A State of Play of their Socio-Economic Characteristics. JRC Scientific and Policy Reports, 2013.
- MARSDEN, T. et al. 2000. Food Supply Chain Approaches: Exploring their Role in Rural Development. In *Sociologia Ruralis*, vol. 40, 2000, no. 4, pp. 424–438.
- MINISTRY OF FINANCE OF THE SLOVAK REPUBLIC. Register of Financial Statements.
- RONG, A. – AKKERMAN, R. – GRUNOW, M. 2011. An optimization approach for managing fresh food quality throughout the supply chain. In *International Journal of Production Economics*, vol. 131, 2011, pp. 421–429.
- ROVNÝ, P. – NAGYOVÁ, Ľ. 2007. Úloha a postavenie poľnohospodárstva v národnom hospodárstve na Slovensku a v EÚ. In *Acta Universitatis Bohemiae Meridionales: The Scientific Journal for Economics, Management and Trade*, vol. 10, 2007, no. 2, pp. 49–54.
- SELLITTO, M. A. – MACHADO VIAL, L. A. – VIEGAS, C. V. 2018. Critical success factors in Short Food Supply Chains: Case studies with milk and dairy producers from Italy and Brazil. In *Journal of Cleaner Production*, vol. 170, 2018, pp. 1361–1368.
- VAN DER PLOEG, J. D. et al. 2000. Rural Development: From Practices and Policies towards Theory. In *Sociologia Ruralis*, vol. 40, 2000, no. 4, pp. 391–408.