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**SOCIO-ECONOMIC AND SPATIAL CONTEXT OF THE  
SHORT SUPPLY CHAIN FROM PRODUCERS'  
PERSPECTIVE, USING THE EXAMPLE OF VAS  
COUNTY**

Theses for doctoral thesis (PhD)

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**2022**

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## **1. MOTIVATIONS FOR THE CHOICE OF TOPIC AND THE AIM OF THE RESEARCH**

Two main factors have motivated my choice of topic. The first one is personal, since I chose regional economics as a major subject at university and then after finishing my studies I took a job in the field of rural development. I have been involved in rural development, helping local producers, farmers and craftsmen to access the market, mainly in Vas County, since 2007. The many practical challenges I have encountered in my work have encouraged me to find scientific solutions to the socio-economic context of direct marketing of farm products. Another reason is that the last decade has also seen significant changes in the world, with an increased need to purchase food from closer and more reliable sources. The traditional food system has witnessed massive changes since the second half of the 20th century, which have continued since then due to globalisation, industrialisation and changes in agriculture - intensive land use, increasing farm sizes and exploitation of labour (Maxwell - Slater, 2003). Today, consumption is disconnected from seasonality and geography. In supermarkets, products from all over the world are available at any time of the year. When food is taken off the shelves, it is almost ready to eat. There has also been a sharp shift in consumer behaviour, with a focus on access to healthy food, but with a particular emphasis on environmental concerns (Briggs et al, 2013). Food sensitivities based on real diseases are now commonplace, but so are fad diets. All of these have further increased the demand for healthy food products. The picture of the food system today is twofold, with some consumers increasingly looking for healthy, traceable, locally-sourced, environmentally-friendly and fairly-produced food products. However, excessive consumption is causing huge health and environmental damage. More than half of the adult population in the EU is overweight (EUROSTAT, 2019).

Exploitation of land and water, environmental pollution, use of chemicals and intensive agricultural technologies are leading to environmental disasters. As a result of climate change, areas are flooded or desertification sets in, and plants that were once indigenous disappear and are replaced by new ones. The Earth's food system is under threat, we have less and less to distribute and more and more hungry mouths to feed, yet 20% of the food produced in the European Union, for example, is thrown away (Stenmarck et al., 2016).

However, a process has been set in motion to reverse the damage. The 'farm-to-fork' strategy (European Commission, 2020), which is part of the European Green Deal (European Commission, 2020), aims to ensure that every citizen of the European Union has access to healthy, environmentally produced food at a fair price. In the wake of pandemic COVID-19, the local food system has been given greater emphasis than ever before. Locally produced food has become even more prominent as a result of both a reduction in sources of supply and a loss of consumer confidence in foreign goods. Future food systems will need to be resilient and flexible to ensure access to fresh and healthy food for all in all circumstances. The impact of the epidemic has led to a growing number of researchers at international and national level turning their attention to this issue. The increase in consumer awareness, the increased purchase of products directly from the producer, and the emergence of the short supply chain in the public consciousness have enhanced the theoretical and practical value of my research.

The study of short food supply chains is a relatively new discipline that has grown out of theoretical research on alternative food webs. The study of the alternative food network and thus the short food supply chain is in its initial stage in Hungary, while the first publications on the topic of alternative food networks appeared in

the western literature in the early 1990s, followed by research on short supply chains in the early 2000s.

The research aims are to investigate the socio-economic and spatial context of the domestic short supply chain. The objective is to explore what kind of topics research in Hungary has investigated and what results have been obtained. Do the results of domestic research differ markedly from international research? I intend to investigate whether the level of smallholder activity has changed in recent years and whether we can see regional differences when looking at national data. My aim is to investigate the short supply chain of a narrower geographical area, County Vas, from a producer perspective. How can a short supply chain work in a geographically limited area? What development needs do producers have and what obstacles do they encounter? What solutions can be found to these problems?

## **2. MAIN RESEARCH QUESTIONS**

Based on the above listed facts, three research questions can be formulated. **First research question** concerns the aspects of short supply chains that domestic researchers have examined. Has domestic research revealed regional differences in the socio-economic dimension of short supply chains? Which areas of the country have Hungarian researchers investigated, what methods have they used, what were their main research findings? When did research on short supply chains start at an academic level in Hungary?

Hypothesis: Domestic research has mainly adopted the findings of the international literature, with the main directions focusing on research from producers' and consumers' perspectives.

**As a second research question**, I am looking for the answer to how the situation and activity level of small farmers in Hungary changed from 2014 to 2019. What spatial differences can be identified at the county level? What factors are causing these differences? Which counties have started to develop, and which are stagnating or not developing at the pace that would have been expected on the basis of the previous researchers?

Hypothesis: The review of the Index of Food Relocalisation Producer sub-Index (IFR-PI) shows that the level of activity of small-scale producers in the local food system has not changed markedly.

**Third research question** is how to develop and operationalise the short food supply chain at county or even more micro-regional level. What are the main problems and difficulties that producers face? What are the tools and interventions to help producers' presence at SFSC and reduce the difficulties? What is the best way to facilitate efficient operation?

Hypothesis: Analysis of the results at county level allows the construction of a model of the short supply chain at micro-regional level. The role of SFSC-organisers is of paramount importance in the development of short supply chains.

### **3. CONCLUSIONS AND PROPOSALS**

#### **3.1 Main findings and results and verification of the research questions**

For the last decade, direct sales to producers, the short supply chain, has undergone a huge development both in the Western countries and in Hungary. More than 15% of EU agricultural businesses

already sell more than half of their produce directly. However, their importance is still negligible compared to products sold in the long supply chain. Not only are more and more people becoming involved in direct sales in practice, but the subject is also increasingly being discussed in the scientific discourse. The short supply chain could be a key driver for the transition to a more sustainable agriculture and food industry from a socio-economic and environmental perspective. For producers, direct sales provide a sense of social utility and a way of life beyond economic gain. In many cases, the main motivation for starting up this activity is to provide consumers with healthy, fresh food. The same is true on the consumer side. Buying from a producer is not only important for subsistence reasons, to buy food, but also offers a sense of experience. It is an opportunity for consumers to support the local economy through their consumption choices and to buck globalisation and general trends. The main drive of direct selling is trust, a personal, transparent relationship. The Covid virus epidemic has made the importance of this direct, trusting relationship even more important. The short supply chain also provides an opportunity for food self-determination to become stronger in a given region, and for food re-localisation to take place. However, this requires not only strengthening the supply side, but also ensuring sufficient supply. The quote in the introduction - let us do our utmost - applies not only to my own research and research work, but also to the level of individual consumers, who must raise the level of consumer awareness and make decisions to do everything possible within their financial and other means. Taking all this into account, however, there are still many obstacles to the global spread of short supply chains, as their socio-economic and environmental benefits are not always proven or only apply if certain conditions are met.

The findings and results of the thesis are based on international and national literature research and empirical data collection and processing. Based on the research findings, the following theses can be formulated in relation to the research questions.

**The first research question** concerned the main trends in domestic short food supply chain research.

**Thesis 1:** Scientific works published by domestic researchers can be divided into four groups according to subject areas:

- (1) consumer-oriented research,
- (2) producer-oriented research,
- (3) impact studies - social, economic, environmental,
- (4) Short Food Supply Chain types.

The research led me to the conclusion that, in addition to supply and demand factors, research on the effects (social, economic, environmental) of SFSC and its types is an important area. A systematic literature search based on the PRISMA method has confirmed that research on short supply chains in the domestic literature only started at the end of the first decade of the 21st century. Thus, in the initial phase, the basic definitions were mostly adopted by the researchers of the topic, and later the adaptation of foreign definitions and research methodologies to domestic conditions began. We observed an increase in the number of researches in 2014 and 2020. The latter is due to the impact of the COVID-19 pandemic on the food system. Consumer studies mainly focus on purchase motivations, willingness to pay, and attitudes towards SFSC. In a few cases, the issue of trust, which is a major factor in direct sales, is explored, as well as the role of trademarks and geographical indications in this context. Another popular theme in research on producers is the study of motivations and attitudes (for example, using Ajzen's model of planned behaviour), and the issue of livelihood. Several experts are concerned about the

criteria smallholders choose upon, from among the indirect marketing channels. Several studies have examined the socio-economic or environmental impacts of short supply chains. SFSC is an important tool for rural development, and experts have focused on several aspects of it. Publications analysing the impact of the coronavirus epidemic on indirect marketing were published in 2020. Legislative amendments and policy proposals are the most important outputs of the use of research in the field of health, and are therefore not absent from the domestic literature. As the fourth focus area, I identified different types of SFSCs, which have been researched according to several aspects. Markets, shopping communities and community-supported agriculture represent the largest proportion of the domestic types of short food supply chain examined in the literature I have analysed.

**Second research question:** How has the level of activity of small farmers changed over the past half decade in the light of the Index of Food Relocalization Producer sub-Index (IFR-PI) review?

**Thesis 2:** Overall, the level of smallholder activity has increased somewhat in Hungary from 2014 to 2019, but this is no longer the case in all counties. In nine of the twenty counties, the level of smallholder activity increased in two counties, remained stable in two counties and decreased in nine counties when looking at the data for 2014 and 2019. The current value of the IFR-PI is most favourable in Szabolcs-Szatmár-Bereg, Bács-Kiskun, followed by Hajdú-Bihar and Borsod-Abaúj-Zemplén counties. Over the five-year period under review, these counties have become even more disconnected from the others. The development potential of the local food system is most favourable in Budapest in both years, due to the capital's population size and favourable income and education levels. The favourable situation is further helped by the fact that any small producer can supply from anywhere in the

country. The situation in Győr-Moson-Sopron county is similar to that in Budapest, with high solvent demand, high smallholder activity due to its geographical location and a high number of organic farmers. The development potential of twelve counties has improved over the half decade. However, the development potential of Szabolcs-Szatmár-Bereg county is not as promising as its current situation, which means that it is likely to be overtaken by other counties in the coming years.

The results show that the counties with a traditionally agricultural character are the fastest to benefit from fund resources. Taking the physical aging factors and the activity of NGOs and local authorities into account in a given county can accelerate the development of the short supply chains. The producer side of the short food supply chain has different characteristics at county level. Territorial specificities should also be taken into account for agricultural and other EU support. This requires the involvement of professional organisations that can help to design a support system that is adapted to these specificities.

**Third research question:** What tools and interventions can be used to help producers in the short food supply chain and reduce the difficulties based on the Vas County study?

**Thesis 3:** Based on the problems identified during the interviews and the proposed solutions, it can be concluded that regional cooperation between the actors of the system is necessary for the successful market access of producers in a micro-region. The analysis of the results at county level will allow the establishment of a model of short food supply chain at micro-regional level. The role of SFSC-organisers is of paramount importance in the development of short food supply chains. SFSC-organisers are professionals with a broad knowledge of small-scale food production, processing, marketing, logistics, finance and

administration required to run agricultural businesses and sell products. They promote effective and successful cooperation between actors in the short food supply chain through their excellent communication skills and integrated regional network.

An efficient short supply food chain model should address the main constraints mentioned by the interviewees in the empirical part, such as production, processing, sales, logistics, tendering and administration, as well as externalities and innovation effects. The role of consumers should not be forgotten either, as developing the demand side is as important as the supply side. Consumer engagement with SFSCs is possible not only through quality products, but also by involving them in the understanding and management of the processes. The most effective way to reach consumers is through voluntary activities, farm visits and awareness-raising events.

### **3.2 New and novel results of the research**

In my doctoral thesis, I investigated the socio-economic and spatial context of the short supply chain in Hungary, using the example of Vas county. The research topic can be considered new and novel in several respects, since the Hungarian literature on this topic is very scarce. In the course of the research, several additions, clarifications and partial results were made. These main results are summarised below:

1. Firstly, I explored the phases of food system development and the process of the re-emergence of alternative food networks based on international literature, and then, after examining the convention theory and social embeddedness, I summarised the international characteristics of the short food supply chain.

2. After the international perspective, I focused on the domestic characteristics of the short supply chain. Within the framework of a systematic literature review, I identified four main focus areas for domestic short supply chain research: consumer and producer focus, impacts and types. The main results and findings of two of the four areas - producer focus and types - were among the first in Hungary to be examined and summarised on the basis of the literature available to me. I have pointed out the differences and similarities between SFSC research in Hungary and in developed countries. For a better understanding of the findings of the literature from a practical point of view, I explored the related domestic legal and financial environment, the support options and resources currently available for rural development.
3. After the international and domestic literature research, I focused on the temporal and spatial differences, and analysed the characteristics and differences of the short supply chain in the domestic context by means of indexing. I re-evaluated and modified the methodology of the Index of Food Relocalization Producer Index (revision of the index), updating its indicators to examine the characteristics and changes of the short supply chain in Hungary between 2014 and 2019. On this basis, I found that in nine of the twenty domestic counties, the level of smallholder activity had increased, in two counties it had remained unchanged, and in nine counties it had decreased, when examining data for 2014 and 2019. The counties that were previously best placed have become even more distanced from the others, which suggests that the relevant subsidies have not served to level out the differences among the counties, but even, they have deepened the existing differences.

4. As a result of my empirical research, I explored the current situation of short food supply chain producers in Vas county. As Vas county has not been the focus of previous research, I have explored and presented for the first time its specificities for the short supply chain.
5. I was one of the first in the country to address the impact of the coronavirus epidemic on the short food supply chain, identifying new challenges and opportunities. For the majority of respondents, the first wave of the epidemic did not mean any loss of income at all. A quarter of them recorded an increase in turnover. Those who reported a decrease suffered an average loss of 20-30%. This was due to the closure of markets and restaurants for short or long periods, the cancellation of events and the reluctance of some consumers to leave their homes. Producers were able to respond flexibly to the changes. The marketing channels and opportunities have shifted, with a shift towards direct, personal, trust-based marketing channels. Overall, personal contact, confidence in domestic products, avoidance of crowds, distance and the possibility of greater compliance with hygiene standards were clearly behind the increase in income.
6. I formulated proposals for solutions to the needs and problems of smallholders identified in five thematic areas (I. production, processing, II. logistics, III. sales, IV. development, administration, V. external factors, innovation effects), on the basis of which I developed a model for short food supply chain that can be used at micro-regional level. In connection with the model, I have defined the definition of SFSC-organiser. The analysis of the interviews and the description of the French training of regional experts in sustainable food provided the theoretical background for the concept of SFSC-organiser,

which is endowed with a multitude of contents and adapted to the domestic context.

## **5. SUMMARY AND POSSIBILITIES FOR FURTHER RESEARCH**

The empirical analysis of the short food supply chain in Hungary is greatly hampered by the lack of detailed statistical databases at county, district and settlement level, making comparison with the results of international research difficult, if not impossible. Research on many topics is based solely on case studies. At the individual researcher level, there is no capacity to collect data at national level. In the case of the Index of Food Relocalization Producer sub-Index (IFR-PI) under study, it was not possible to analyse the indicators used in the original Anglo-Saxon literature, as no such or even similar data are available in Hungary. In order to develop scientific research in this field, the national statistical data should include data on small producers, the types and quantities of products they produce, their economic importance, their share in food consumption, employment, etc. An analysis of the share of the different types of marketing in total consumption would also provide interesting results that are comparable at international level.

In this thesis, the focus of the Index of Food Relocalization Producer sub-Index is, as in the original, primarily on the producer side. However, it would also be important to examine the spatial distribution of demand in order to get a complex picture of the spatial-social differences in the development of short food supply chains in the country. The same is true for primary research at county level, where only the producers' perspective has been investigated so far. The next step of the research could be to explore

the consumer side, which includes not only households as final consumers, but also retail, catering and public catering. Businesses and institutions may have a more predictable and higher demand for small scale products than individuals. Larger and scheduled orders can enable the creation of new economies and effectively support the development of short food supply chains at micro-regional level. A continuation of the research could involve extending the county-level survey to more counties, or even a national survey could be implemented.

Further analysis of producers' perspective can be done by typing and grouping respondents according to given criteria. The results could be broadened by examining the systematisation of SFSC-organisers, identifying best practices at home and abroad and analysing the possibilities for adaptation. The results of this research could provide a good basis for policy makers. The recommendations and findings could also serve as a starting point for other research.

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