

Profit Margin Inequality Within the Food Supply Chain

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Abstract The purpose of this paper is to examine the significance and importance of the food supply chain. We will review supply chain theory and focus on food supply chain. A supply chain is a system with three or more organizations that follow a flow of product, services, finances and information in both directions. It's important that all the activities in processes are repeated and aimed at meeting the needs of end consumers. All flows (information flow, financial flow, services and the flow of product) must be interconnected and related to the processes – this is the key for the supply chain to be efficient. We will in general introduce simple and complex supply chain and examine examples of food supply chain in Slovenia and elsewhere in the world. It was proved that Slovenian food supply chain is different than food supply chain in other countries so it is important to know where the supply chain itself is located and how it relates to other supply chain participants especially in terms of financial flow and profit margins that are unequally distributed within the supply chain.

Keywords: • Food supply chain, • supply chain management • Slovenia • supply chain profit • supply chain theory •

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1 Introduction

A supply chain is a system of three or more organizations that follow a flow of products, services, finances and information in both direction. All services in processes are repeated and aimed at meeting the need of end consumers. The supply chain includes information flow, financial flow, material flows, services and the flow of product services (MSC 2017; Chopra and Meindl 2013). It is important that all these flows are interconnected and related to the processes and have good integration – this is the key for supply chain to be effective. We know simple and complex supply chain, where simple supply chain has a linear connection and there is one actor in a particular process, while complex supply chain has many suppliers, processors, warehouses, wholesale customers etc. (Chopra and Meindl 2013). The development of the supply chain itself is carried out in four phases; the first phase relate to internal optimization, the second one relate to the correct informatization, the third to the mutual cooperation and the fourth phase relate to the external optimization (MSC 2017). The classical supply chain has the management of individual functions with almost zero cooperation between processes, so it is isolated. And this bring some disadvantages with large cost, large inventories, product damages, administrative costs are also very high and demand side response is poor. Therefore it does not make sense to have such a supply chain. On this basis, has been created a new form of supply chain, which has more effective approach, because the entire supply chain is accept as one organization (Opara 2003). All this contributes better traceability and transparency of information to all members of the supply chain. The goal of managing the supply chain is to increase the profitability and efficiency of the organization with optimized speed, security and optimization of added value (Opara 2003). In order to optimize the management of supply chain, it needs very good information technology and logistics, so we can say that the concept of 4P is joined by the flexibility, reliability of suppliers and their delivery and the level of inventory. We can save from 40 % to 80 % of total savings, the shipping time can be reduced from 30 % to 50 % and human resources can be reduced from 20% to 30% with proper or efficient management of supply chain (MSC 2017). When talking about agricultural supply chain the conceptualization of consumer products and services as supply chains is now a common practice in most industries. From the farming of basic raw materials to delivery of final products to the consumer, each different step in the entire production process is viewed as link in the chain (Opara 2003).

2 Food supply in Slovenia and in the EU

Food supply chain is specific however same rules apply for the food supply situation. It is very complex, where a lot of producers, suppliers, processors, carriers, warehouses, wholesalers and retailers are present. In the Figure 1 it is seen how complex food supply chains are. In such a complex system, it is difficult to handle all the processes and that the system is synchronized from all sides. The agricultural economy presents two features. The first one is based on greater concentration of farms into smaller numbers with large sizes and rising influence of contract farming and the second one is based on evolution of integrated supply chains linking consumers / retailers and producers.

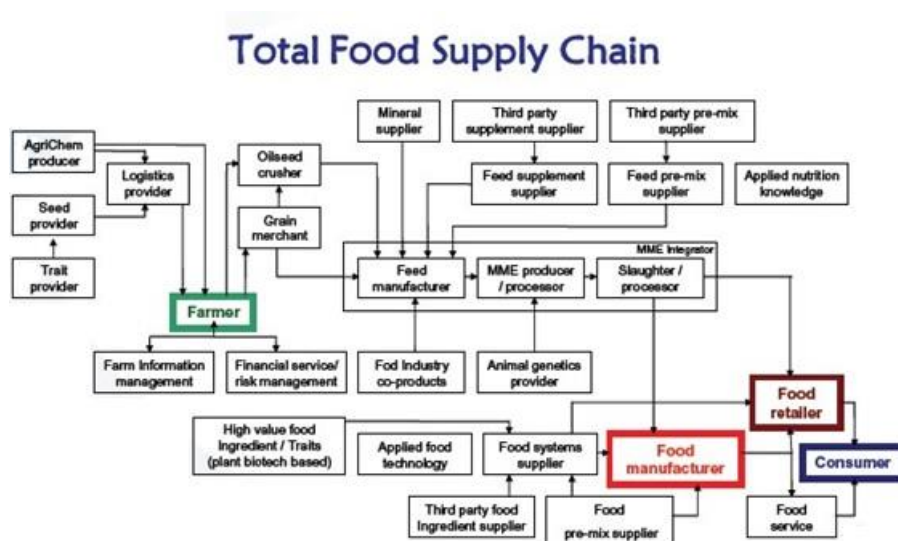


Figure 1: Total food supply chain.

(Source: MoniQA, 2010)

Intensive farming like this create new challenges for sustainable production, which is promoted of a balance approach for food quality, safety etc. and is contrary with genetically modified organisms which might impact human health on a long run. On the other hand food supply chains show increasing number of consumers who demand fresh, palatable, nutritious and safe as well as organic and local domestic food. Due to changing lifestyles and rising income around the world, there is also increasing proportion of meals eaten in restaurants and bars. These factor have major implications on the future of agriculture (Opara, 2003) as well as on the food supply in general.

3 Case studies

Research made by Koman (2011) suggests that relations in the food supply chain are poor in Slovenia and that they reduce competitiveness of Slovenian food supply actors. Therefore, Slovenian traders have only few possibilities compared to other global competitors. Relations are beginning to be fragmented by farmers, as they are in a “misunderstanding” with traders and their high margins. Because of all these misunderstandings, the Ministry of Agriculture decided to use codexes, which are variable for farmers, processors and traders. It is important to know, that food always was and still is one of the strategic human goods and its prices will increase not only in Slovenia, but over the world due to population growth, increasing standard of living and environmental impacts reducing yield and agricultural land. The strongest actor in food supply chain belongs to the retailers having power to set prices and effect on (or even exploit) food producers and food processors. President of the Slovenian Trade Union of Agriculture and Food Industry believes that farmers are not equal members in the supply chain. In principle, food supply chain in Slovenia should have been optimized. It is not optimal that Slovenia only have a very small percentage of Slovenian products in its food supply since the most of the food is imported in Slovenia. In 1992 Slovenian self-sufficiency was almost 90 %, while it fell to 38 % by 2009 (Koman 2011) and is currently app. 40-45 %. This is worrying, because Slovenia has more than 60 % of green areas which are many times unused and sometimes Slovenian food is exported to other countries. Slovenia has great opportunity to increase local produced food for domestic and foreign consumption. The second problem is profit in the supply chain which is unequally distributed. It should be regulated to give more to producers instead of retailers and to offer subsidies for the start-ups dealing with local food.

Study explored the Slovenian market and compared some food items and distribution of profit within their supply chains. In the Figure 2 the proportion of distribution of profit on bread, milk and yogurt in Slovenia is presented. Even if the producers are seen as the most important part of food supply chain, they receive the smallest share when talking about the financial flow. Because of these conditions disagreements between the individuals in the supply chain are common and food quality can be decreased substantially. Consequently, there are less and less local food producers and food processors. It is also known that Slovenia has a very high percentage of imported fruits and vegetables. However,

there are quite a few good practices where the food chain is short. One such example is the vegetable produced in Slovenia. This is consequently not comparable to imported from the quality perspective since the imported one loses a lot of nutrients, minerals and vitamins already at the transport itself. Short supply chain such as at “green box” initiative, where the trader buy goods from twenty major ecological farmers from all over Slovenia are much better for the food quality as well as for the equal distribution of profit margins.

Food item	Yoghurt	Milk	Bread
Total retail price	0,61 EUR	0,8 EUR	1,2 EUR/kg
Price (delivered in warehouse)	0,24 EUR	0,38 EUR	0,44 EUR
Retailer	0,37 EUR or 60,7%	0,42 EUR or 52,5%	0,76 EUR or 63,3%
Manufacturer / Processing facility	0,19 EUR or 31,14 % (dairy)	0,11 EUR or 13,75% (dairy)	0,26 EUR or 21,7% (miller& bakery)
Producer / farmer	0,05 EUR or 8,21%	0,27 EUR or 33,75%	0,18 EUR or 15%

Figure 2: Price cuts for individual supply chain partners for yoghurt, milk and bread (adapted from Koman, 2011).

Interestingly, according to their data, the sale price in “green boxes” is lower than in stores. In this case, the vegetables are not stored, the waste vegetables are almost at a zero level. A good example is also the Agrarie Koper, where farmers joined together and deliver fruit to schools and hospitals. The responsibly ministry also plays an important role in this case since it prepares a list of schools (final customers) and suppliers. This is how the short supply chain is taken care of and encourages the connection between schools, kindergartens and local producers (Šajina 2014).

The term "local food" means food production near its place of consumption, and production is based on local resources. In 2001, Britain carried out a study by the New Economics Foundation, which found that the money spent on locally produced foods generates 2,5 times higher revenue for the local economy than the same amount of money consumed in a typical supermarket. For

example, spent £ 10 on locally produced foods is actually worth £ 25 for the local area, and for the used £ 10 at the supermarket is only £ 14. When money is spent on locally produced food, it remains in a local district where its value is increasing. Consequently, there are also more investments there, which brings new jobs. It can therefore be concluded that the localization of food production is key to the local economy and to achieving social growth (Koman 2011 and Šajina 2014).

Logistics is a key factor between food manufacturers and traders. The research of Zhong et al. (2016) says that out of 24 million people employed in the food supply chain, 21 % are employed by logistics companies. In order for the supply chain to be sustainable, the supply chain itself has to concentrate on the economic, environmental and social perspective simultaneously.

A good example from Europe is the logistic center Limburg, located in the south of the Netherlands. There is a very high productivity in the logistics itself, and their infrastructure enables them to lower the cost of the supply chain and reduce the impact on the environment. North America is the second-largest food industry in the world, with a turnover of 650 billion € in 2013 (Šajina, 2014). Their care is multifaceted, which means that the process itself is large and complex, but it nevertheless tries to keep up with economic growth of around 3 % with various innovations. Food companies aggressively spin on the market, which brings a variety of risks. The use of biotechnology is also increasing in order to satisfy a sufficient amount of food. China is the third largest food producer with a turnover of around EUR 767 billion. In the Chinese and other Asian food supply chains, low prices (and sometime questionable quality) based on labor exploitation and inhumane working conditions, etc. can be present therefore it is disputable from social and environmental perspective.

Conditions of food supply chains, food quality and principles of organic farming and locally produced food is very different from the geographical location of producers, processors and retailers as well as how it relates with other global supply chain actors. The general problem is to provide food that has some quality standards for the entire global population. Giants of the global food industry, which can many times not be regulated, controlled and counteracted have a great influence on global food supply. According to the data on food supply chains there are many multinationals that have annual income above Slovenian annual budgeted therefore their impact as lobbies is severe. It should be necessary to begin

to shrink profit at the very top and redistribute a part of it to farmers and producers however this mission is almost impossible.

4 Conclusion

Supply chain in food industry is very important and production, processing and their operations to provide a smooth flow of food is crucial. It is important to know where the supply chain is located in the world, because every country has its own special features. We cannot expect same supply chain styles in country which have totally different mentality, GDP and standard of living as from the countries which do not have opportunity to raise local food. In case of profit margin redistribution authors would recommend that the producers should be protected by the Ministry of Agriculture, to have guaranteed purchased price especially for organic farming since it is unfair that the most important part of the supply chain have minimal financial gains. Slovenia should also advertise local food consumption more effectively and offer education of local food, negative impacts of imported food (e.g. food miles) and organic farming. The good idea is also to include local (and if possible organic) food in kindergartens and schools and to promote that every school should find local food producers and offer children only local vegetables and fruits at breakfast, snacks and lunch. What we eat is what our future is based on. Slovenia as a small country with a lot of green areas has high potential to become a pioneer in local food production and consumption to avoid food miles, lower nutritional values, create added value at home and to keep the profit at the level of local food producers.

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