

VALUE CHAIN OF AGRICULTURAL-FOOD PRODUCTS¹

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Abstract

With its specific determinants, during the previous decades, retail has been characterized by distinct competitiveness, concentration, consolidation and globalization. Diversification of the retail market has led to the saturation of the supply, which imposed the need for searching of sources of competitive advantage and creation of values in other domains besides those classically considered as retail. Companies are trying to change their business in order to find new ways of accessing to customers. Internationalization and consolidation of retail was reversed upside down the appearance of traditional retail. Fast and efficient operating procedures and new technologies are considered as permanent challenges for retailers. The term of supply chain management is relatively new in professional literature. First time it was mentioned in 1982. Supply chain represents a set of institutions involved in the process of goods transfer from the place of production to the place of consumption.

Retail is the last link in the supply chain. Successful management of the supply chain will result in significant savings and increased customer satisfaction. Retail is responsible for equalizing the individual needs of customers with the size of supply produced by a large number of producers. Managing to the supply chain of agricultural-food products should take into reconsideration only strategic suppliers within the value chain. Without close interaction with other supply chain members traders cannot fully realize their role in the supply chain. Entities involved in

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retail of agricultural and food products resort to managing the supply chains in order to face increased market insecurity and complexity, as well as competitive situations trying to reduce level of supplies across the entire value chain. Products' value chain describes the full range of activities needed to bring the product from production, transportation, processing and retailing to the final consumer. It has been expanded by series of combinations that involve engagement of equipment, labour, knowledge and skills, raw materials for the production of an agricultural or food product.

Efficient managing of supply chain of agricultural and food products should support the customers' satisfaction. Retailers operate at the point closest to customers, so they are in the best position to answer the questions when, where and how customers want certain goods. Supply chain management in retail of agro-food products represents a challenge in the phase of implementation and execution. It should be emphasized that traders of agro-food products which want to be successful, and understand the importance and functioning of supply chain management have to use the capabilities of all supply chain members in order to be more successful and profitable.

The value chain of the agricultural and food products is consisted of all members of supply chain that are active in the process of the value creation and products delivery to the final customers. Trade with agro-food products is resulting the value added, creating the assumptions of the competitive advantage at the market.

Key words: *value chain, supply chain, agricultural and food products, value added.*

Introduction

Managing the supply chain is inseparable from the size of value chain management. The value chain of agricultural-food products contains all members of the supply chain that participate in the process of creating the values and products delivery to the final customer. As the trade is highly competitive activity which must have much better and more quality relation within the supply chain that will result with additional value for the final buyer, nowadays it's the source of competitive advantage on the market.

From the need for more efficient relationship with the customer, a number of modern concepts have emerged, where the most famous is an Efficient Consumer Response (ECR). Starting point in ECR is also found by development of the concepts of supply chain and value chain management.

In order to achieve better efficiency, it is necessary to interconnect all members from the supply and value chain management. The emphasis is on the structure and processes between producers and traders i.e. on the integration of logistic processes. In order to strengthen their competitiveness, the chain members create even stronger connections creating partnerships in which they do not lose their independence - creating of strategic alliances (Ćejvanović et al., 2016).

Theoretical determinations of the chain oriented by the value

The value chain is the series of nine primary and supporting activities which increase products or services values and which connect supply with demand side of the business activity. Because of that creating a profitable value chain requires adjustment between the consumers' wishes (the demand chain) and things made in supply chain. In order to maximize the value of supply chain, it is necessary to harmonize the flow of supply according to fast changing in consumers' wishes and demands (Perkov, Ćosić, 2012).

For some time, there has been controversy about the true value of the company, is it:

- The value assigned by market (market value);
- The value stated in the balance sheet of the company (the book value of assets reduced for liabilities);
- Expected performance, profit or cash;
- Nothing from previously mentioned;
- All previously mentioned is considered as the company's value;

In order to achieve the success, for many companies the main goal is to maximize the so-called shareholder value. Value based management is focused on maximizing the shareholder value. Value based management can be classified as managing based on the value.

Criticism of mentioned theory appeared in 1980., when was promoting the aspect that the main goal of company was not only to increase values for owners (shareholders) but for all stakeholders. Regardless of which interest groups the company values are intended for, managing the companies' values is in the focus of the value based management. Value based management is also linked with the company's business efficiency (business performance).

Currently, management based on values is oriented to indicators that include costs of capital such as EVA methods - economic added value - in order to present the real company value, as well as CFROI method - the cash flow of return on investment.

During the managing of the company values, performance management indicators are the final results of the established and selected strategy. Managers must link the chosen strategy with the process of creating the value, in other words to choose the strategy that result with increasing of market share, customer satisfaction, increase the sales, etc. It should also result the increase of company value.

Managers must set the foundation of the value based orientation of entire organization and all levels of management in order to increase the value. Also they should to redefine the whole supply chain so that all chain members could be in position to reach the same value (Čejvanović et al., 2016).

Creating the value in chain

As was previously mentioned term supply chain is usually identified with the meaning of the term value chain. It was introduced by Porter, describing the profitability at each level or chain segment. By value is marked relative profit gained by each partner in chain. Value within the chain depends from the type of product that chain members are offering to the customer, in other words, depending of which kind of need it has to satisfy.

Supply chain is the creator of the value only when each member in chain is capable to create and catch certain level of the value. Value could be also reconsidered from two various aspects:

- Value is when something or someone is satisfying certain need, or expectation, in other words gives the feel of additional or greater value than real one.
- Value is the measure opposite to the costs. Many companies should increase the focus on the value component in compare to costs within the supply chain, what will resulted the decrease of final costs if chain efficiency go up.

In supply chain, focus on value added could recognize that it's a real one (final value) only when entire chain is brought closer to the consumer (buyer).

The challenges in creating the values primarily cover the faster conduction of processes e.g. faster adaptation of products, faster realization of products on the market, faster repay of receivables, etc. It is necessary to rationalize all processes within the chain, improve the products quality and increase the efficiency of delivery. Basically that means focus on challenges such as:

- Decrease of supplies;
- Adequate reaction on orders;
- Shorter and more reliable delivery within the entire chain;
- Products delivered according to postulate of exact quantity, quality and defined time in relation to appropriate costs;
- Close cooperation and linkage of all members within the chain based on mutual understanding.

Value creation could not be done individually within the chain. It's a two-way process that requires focus from all members. Also, it covers a decision making about mutual cooperation and coexistence within the chain. Besides, it's based on certain requirement, like what will be the best strategy for them, as well as what should they exactly exchange.

Exchange among members could be referred on anything, in order to create the value with mutual benefit (Ćejvanović et al., 2016).

- Personnel – exchange/lending of professional staff;
- Raw material – design, common supply;

- Facilities and equipment – common usage;
- Money – mutual lending, investments;
- Information – access to data;
- Working procedures – exchange of ideas.

If creation of value is considered from the aspect of shorter or longer period, in terms of links within the chain and mutual exchange of all elements, their connection could be presented as like in Table 1.

Table 1. *Creating value*

Co-operative	Fellow's
Transactional	Exclusive

Source: *Emmet, Crocker, 2009.*

Mentioned relations could be described or clarified as is presented in Table 2.

Table 2. *Relations in value creation*

Position	Need for relation	Need for exchange	Description	Example
Transactional	Low	Low	Each member has its own goal and they are working commonly just to finish some short term activity	Routine products
Exclusive	Low	High	Specific short term exclusive exchange	Launching of new products
Co-operative	High	Low	Working together in order to secure supply, but there is no need for exchange	Problematic products
Fellow's	High	High	All parts are focused to common good and open access to mutual resources	Critical products

Source: *Čejvanović et al., 2016.*

Examples of agricultural product's value chains

The value chain identifies primary and support activities. It defines a set of related activities that are conducted within one business unit. Each activity creates the costs and links between certain activities. The value chain also includes a business gain that buyers are willing to pay above the costs of conduction of both groups of activities.

A value chain is a line of primary and support activities by which the value is added to the products or services, or which links the supply with demand side of company's business.

Because of that the establishment of profitable value chain requires the harmonization of changes in customer wishes, i.e. the demand chain and part that was created within the supply chain.

In order to maximize the value of the supply chains, it is required to adjust the supply flow with the value flow starting from consumers, due to rapid changes in their taste, desires and demands (Perkov, Ćosić, 2012).

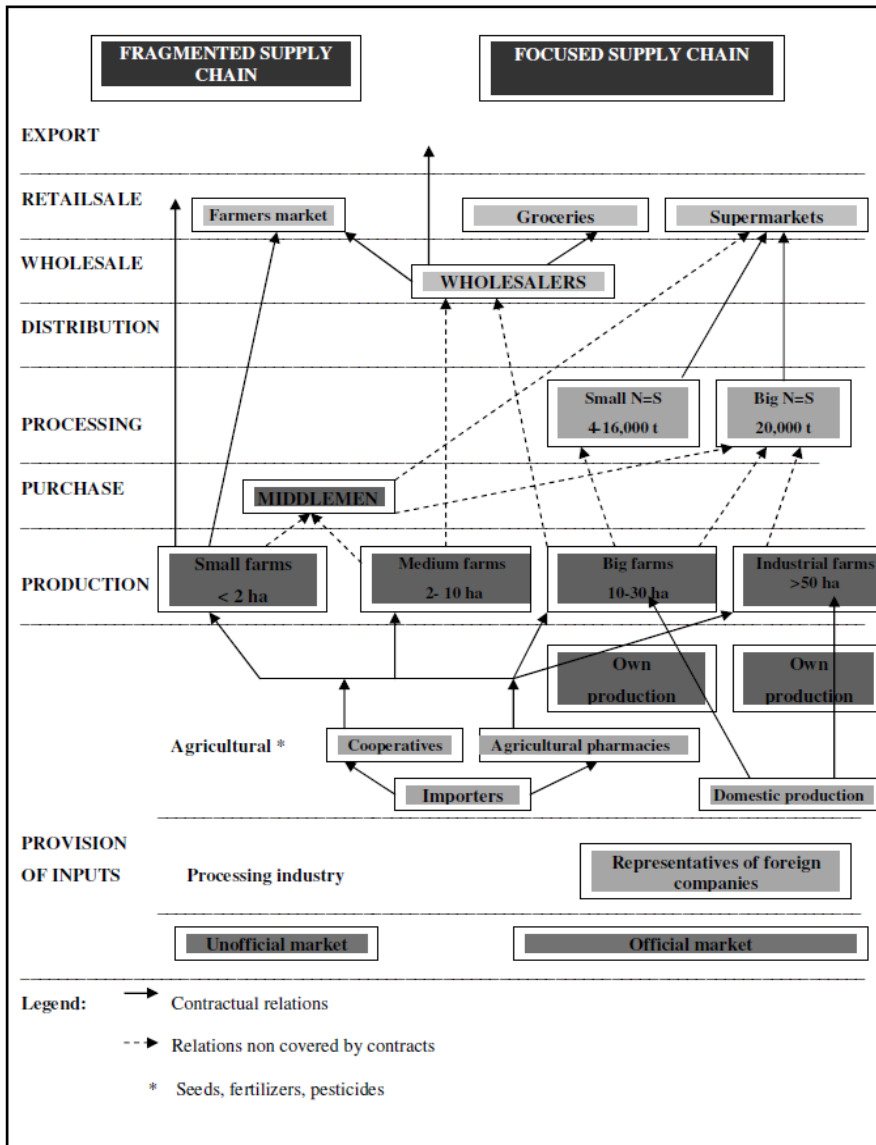
Value chains of fruits and vegetables

The value chain of fruits and vegetables has its own specificities due to the different characteristics and types of fruits and vegetables.

Their production is of great importance because it provides to rural - agricultural holdings secure nutrition (primarily vegetables) and income (primarily fruits).

Most of fruits and vegetables and their products are offered on local markets or wholesale markets. Before all, that is caused by the lack of long-term contracts with processors or traders, lack of storage capacities and organized logistics, low level prices that does not enable investment in modern production technologies, which will secure enough volume of high-quality products that could be realized at the market, previously integrated within the existed value chains (FMPVŠ BH, 2014). In the Picture 1. is presented the value chain at fruits and vegetables.

Picture 1. Value chains of fruits and vegetables



Source: FMPVŠ BH, 2014.

Middle-sized producers (Picture 1.) oriented to the market (2-10 hectares), that are usually the main force for the development of the fruit and vegetable sector in competitive countries, unfortunately are not present in significant number, although they develop in certain amount better share in the value chain throughout the contractual relation with intermediaries.

But, they are usually short, primarily with storage capacities, equipment and labour (human resources). Besides, there are several large agricultural holdings and companies that have better machinery, equipment, human resources and marketing activities. Those holding supply stores within the retail chains, as well as export the part of their current production.

Collecting of fruit and vegetable (from smaller holdings) is mostly done throughout the intermediary traders, while larger producers could directly supply processors, wholesalers and retail traders. Main issues in collection process are:

- Lack of modern storage capacities;
- Lack of modern centres for distribution that imply new technology for processing and standardization of offered products;
- Inadequate transportation, caused by lack of proper transport capacities and underdeveloped (road) infrastructure;
- High costs of collections caused by dispersed locations of small agricultural holdings;
- Presence of grey economy (FMPVŠ BH, 2014).

There are rare exceptions that succeed to combat the main issues and organize supply chain in a way that meets customer requirements in terms of insured quantities and quality. Processing companies generally are not vertically integrated. From the aspect of input supplying, some of them are covered by contracts with small agricultural producers, while in terms of retail sale they usually do not have their own retail facilities.

According to mentioned, their power to negotiate with large retail chains is usually weak, especially in a situation described by strong competition of similar legal entities from neighbouring countries. Besides that, processors are facing the next problems:

- Inadequate quality and volume of domestic inputs;
- Obsolete technology;
- Low rate of capacities utilization;
- Growing of inputs costs;
- High rate of organic waste and increasing requirements related to environment protection;

- Limited and traditional assortment - prevails the „primary“ processing;
- Limited activities of marketing and promotion.

Although, large retail chains dominate at the market, their share in fruit and vegetable trade is still relatively low (around 10%), much lower than in trade with meat and meat products, fish or milk and dairy products.

Large retail chains have more significant market share in the segment of processed fruit and vegetables trade. On other side, domestic producers are underrepresented in mentioned process, as imported products are dominated, making the strong competition to producers from Bosnia and Herzegovina (FMPVŠ BH, 2014).

Value chain of milk and dairy products

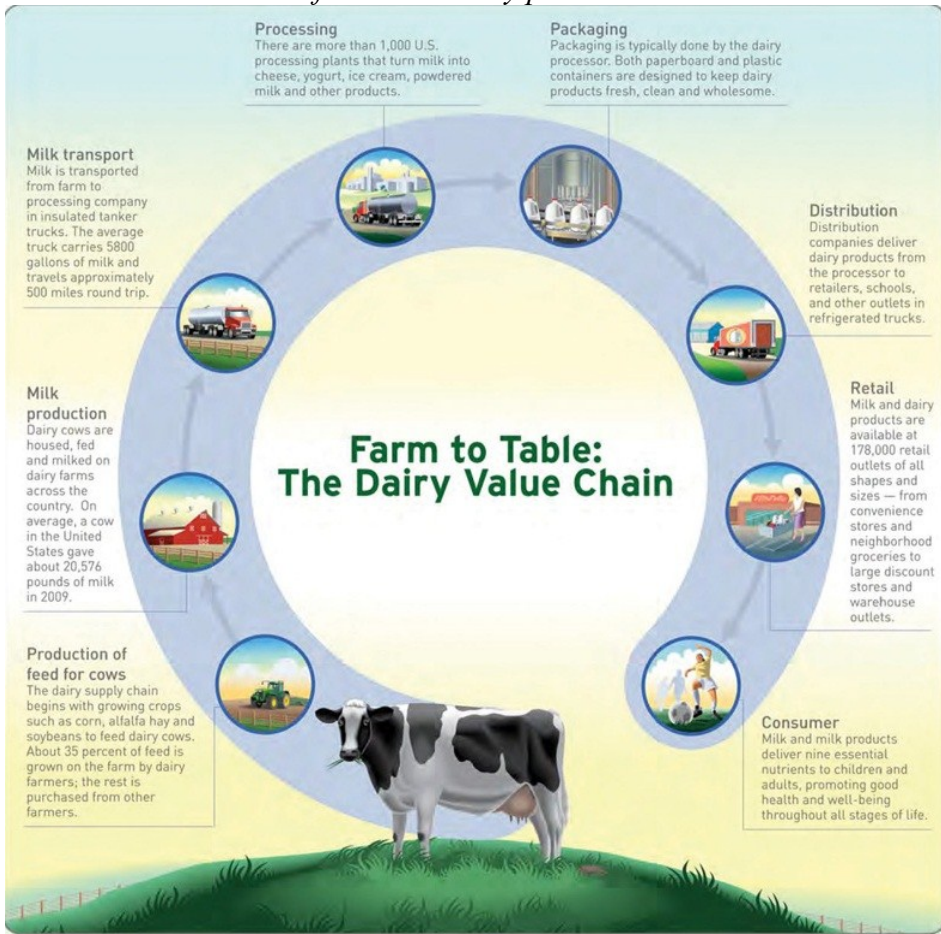
Milk and dairy products value chain represents a row of nine primary and supporting activities, throughout which is adding the value to products or services, or provides the link between the supply and demand side of company's business. Therefore, the creation of a profitable value chain requires the adjustment to change of clients' wishes, i.e. harmonization of demand chain with things created in supply chain.

In order to achieve maximal value within the supply chains, it is necessary to harmonize the flow of supply with the flow of value starting from consumers, due to rapid changes in their tastes, desires and demands (Perkov, Ćosić, 2012).

A value chain in the production of milk and dairy products constitutes a line of activities and procedures that are necessary in order to enable products availability to consumer. The value chain of milk and dairy products begins with the production of feed for dairy animals.

By their metabolism, dairy animals are producing the fresh milk which is transported to dairies on further processing into the several final products. After that, the final dairy products are packaging and preparing for distribution. Milk and dairy products are distributed to retail facilities where they are available to the customers (end consumers). The value chain of milk and dairy products is presented in the Picture 2.

Picture 2. *Value chain of milk and dairy products*



Source: *ICUSD, 2012.*

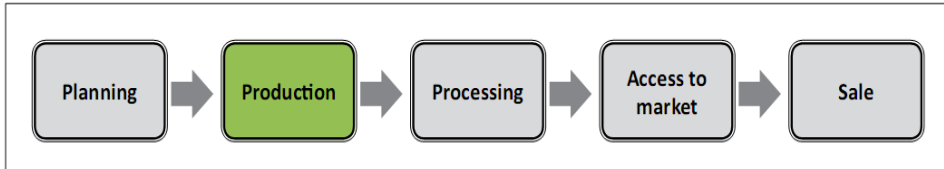
Each value chain has its own specificities that has been presented in detail and explained. This is also the case with the value chain for milk and dairy products, which is clearly presented in the Picture 2. It could not be seen from previous picture that value chain is also influenced by certain secondary institutions, laboratories for milk quality analysis, as well as by the foreign trade policy of one or several countries.

Value chain in rural economy

The value chain of agricultural and food products within the rural economy are specific, having a certain peculiarities for each product individually. For all agro-food products are common that the value chain

starts with planning, followed by the production and processing. Then, the product is distributed to retail, where it could be available to consumers. The value chain of agricultural and food products in rural economy are presented in Picture 3.

Picture 3. *Value chain of agricultural-food products in rural economy*



Source: *FAO, 2012.*

Throughout the analysis of the value chain of agro-food products in rural economy, it could be concluded that certain attention to issues related to weaknesses in value chains has been considered.

It has to be done in such a way that the available opportunities will be utilized in order to turn latent natural and human resources of rural areas into the real and strong advantages that will provide adequate building and development of rural economies and communities.

Conclusion

Recently, logistics and distribution have become more and more significant. Within their determination they are experiencing the renaissance, or notable metamorphosis of approach to the logistic performances of the company. Just in last ten years logistics has been recognized as one of the main company functions. It has been widely accepted by managers that the global approach to logistic issues and offered modalities (solution) is needed.

Creating of agricultural and food products value have not been realized individually within the supply chain. Creation of the value is a two-way process that requires focus and decision making about mutual cooperation and coexistence within the supply chain from all participants. It is based on the requirement what is the best strategy for them, as well as what should be exactly exchange between them.

The way which will improve the value chain of fruits and vegetables is recognized in certification of production process as the integrated

production. It could be achieved without large investments and major changes in production procedure. Fruit and vegetable producers have to accept the changes required from the European market.

Market standards are not regulated by the government, but in practice wherever the cooperation between the primary producers and fruit and vegetable processors is developed, elementary standardization has been adopted by limited number of producers. Mostly those are Global GAP (for primary production) and HACCP (for processing industry). Certification according to HALAL standard is also increasing.

A value chain in milk and dairy products production is constituted from the row of activities and procedures that are necessary in order to enable the availability of products to final consumer. It starts with the production of feed for dairy animals. By their metabolism dairy animals are providing the fresh milk that is transported to dairy plants on further processing into the several final products. Then, the final dairy products are packaging and preparing for distribution to retail stores where they are accessible to final consumer (customer).

Value chain of agricultural and food products in rural economy has its own specificities, depending by the focused product. Generally, the value chain of agricultural and food products in rural economy are starting with planning. Further it's realized throughout the production and processing activities, up to the distribution of products to the retail stores and final consumers.

Research presented in this paper are showing that agriculture and value chain of agricultural and food products have number of weaknesses, as they are not capable to compete at national and foreign market. Consequence of mentioned producers' weaknesses is their uncompetitiveness, as well as incompatibility of their production capacities that should satisfy the needs of contemporary market.

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