How to identify the value-based food chains: a Slovenian case study

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SUMMARY
Since 2011 one of the new types of food chains has been often described in scientific literature. It is called value-based food chains (VBFC) and referred to as the food chains with added values. The added values are usually expressed through three different ways such as i) high quality food products, ii) different protected designations and iii) fair business relationships among the actors in food chain. This paper discusses which are the indicators for identifying the added values and additionally unravels different social and economic interactions between actors among the supply chain, also recognized as the characteristics of VBFC.

Key words: Value-based food chains, added values, Planika dairy, Slovenia

INTRODUCTION
The common use of “value-based food chain (VBFC)” terminology can be found in the recent European scientific literature (Pirog and Bregendhal, 2012; European Parliament, 2013). Vacas et al. (2014) explained positive direct and indirect socio-economic effects of VBFC in increasing the local economy and community, such as higher farmer’s income, lower unemployment rate and good relationships between the actors. Authors also argue that positive direct and indirect economic effect of value-based food chains are definitely lower compared to conventional food chains, because of higher production costs and investments in production and processing system. The most commonly characteristics of VBFC are: i) producing and spreading the values equably to all partners, addressing producers, processors, retailers and consumers (according to Stevenson et al., 2011; Viitaharju et al., 2005) and ii) producing food products which are differentiated from similar food products based on product attributes such as food quality and safety. Values of VBFC based on an excellent cooperation and information flow between chain members during growth, aiming to provide transparency (Münchhausen et al., 2014). The main difference between VBFC and other forms of food chains is in expressing the (added) value (“Value” and/or “Value added”) which could be expressed through three different ways (Stevenson and Pirog, 2008; Pirog and Bregendhal, 2012; European Parliament, 2013):

a) through the agro-food products made from raw materials expressing the origin of the food and consequently reaching a higher price on the market;

b) through the protected designations labels expressing geographic location, higher quality and/or food safety and

c) as a combination of correct business relationships and interactions between different actors in the food chain.

Stevenson and Pirog (2008), Pirog and Bregendhal (2012) and Stevenson (2013) explained the definition of food chain with added value according food chain ac-

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tors relationships. These differences are the following:
a) business relationships between strategic partners in the VBFC are built on common principles, which are primarily based and built through the trust component. The strategic partners contribute a large share to well organization and functionality of the chain. Strategic partners are commonly the companies or processors;
b) the producers/farmers are treated the same as the strategic partners in discussion about risk management and decision-making;
c) obligations and rights in the chain are placed for improving the benefits of all actors and
d) coordination of the actors is performed at the local, regional, national and/or international level.
The scheme of classification the agro-food chains according to two different ways of selling and marketing the agricultural and food products can be gleaned from Figure 1.

FIGURE 1: Classification of agro-food chains, given the components of agro-food chains system including different ways of selling and marketing the agricultural and food products (according to Low and Vogel, 2011; Barham et al., 2012)

VBFC – EU case studies
Münchhausen et al. (2014) described some examples of VBFC in Germany. The agro-food chains Bohlsener Mühlе GmbH & Co. KG and Rinklin Naturkost GmbH have been developed to large successful companies from a local processing companies. In addition to the management efficiency of the agro-food chain, the main actors in the chains are important factors for the success of the dealing with values in agro-food chain. These values, such as “fair price”, animal welfare, environmentally friendly farming manner and less use of plant protection products stand for the solidarity between the actors. Further, adapted from Furtsgheger and Schermer (2014), these values can refer to the social and regional economic cooperation, with the clear aim to point at the importance of production and consumption of high-quality food. Bio vom Berg and Biohof Achleitner are examples of value based agro-food chains from Austria. The names represent trademarks that combine various organic producers, while Bio vom Berg focused on buying raw materials only from mountain Austrian Tyrol areas. From the preliminary results of an international project Healthygrowth (Kvam and Bjørkhaug, 2014) it shows that both agro-food chains provide “fair price”, solidarity among actors, preserve the environment, ensure animal welfare and the tradition of food processing. As described by Furtsgheger and Schermer (2014), in both cases the communication between the actors about the values is well-established through different communication channels, such as websites, leaflets, brochures, social networks and quality product designations.

MATERIAL AND METHODS
Following the criteria of value-based food chain a pilot case study has been identified – local dairy Planika (Prišenk, 2015). Selected value based agro-food chain includes components of value added, although it does not represent short agro-food chain. With purchasing milk from local producers it is integrated into the local area. Below there are specified some crucial indicators which should be indicated to confirm the added values in food supply chains.

Economic Benefit and Strategic Collaboration
Upstream and downstream partners in food value chains can derive significant economic benefits from value chain transactions in comparison to more conventional business arrangements. Value chains allow producers and buyers alike to participate in coordinated marketing and distribution activities that maximize product value through strategic responsiveness to buyer demand and consumer preferences and to enjoy the transportation savings associated with shorter supply chains (USDA, 2014). The economic benefits has been analyzed with econometric approach.

Farmers as strategic players
In food value chains, farmers are not anonymous, interchangeable suppliers of homogeneous ingredients and food, as they are in traditional commodity supply chains. Instead, they are strategic collaborators in the chains, which are deliberately designed to allow the farms, the distributors, and others involved to earn a profit (USDA, 2014). This value in Slovenian case study VBFC has been identified as a) a percent of local milk producers involved in Planika milk production in last 5 years and b) as the cooperation between the farmers with other actors in chain management and organization.
Open and ongoing communication with transparency component – clear principles

The strongest food value chains are those forged with a clear understanding of, and consistent communication about, their underlying values. A successful food value chain defines values clearly, integrates them throughout the chain, and communicates them to the customer. The chain is built around participants that honor certain values and can work together to implement them, such as farms that follow agreed-upon values based production standards (USDA, 2014). Interviews with actors in different segments of supply chain management helped us to create networking analysis in identifying the open and ongoing communication with transparency component.

RESULTS AND DISCUSSION

Economic Benefit and Strategic Collaboration – analyses results

Econometric analyses results give clear directions of forecasting the prices of raw milk. The main independent variables in models were prices of consumption milk, which presents the most important dairy product on the market. Results presented by Graph 1 show that the average milk price in Slovenia will decrease for -0.56% if the price of consumption milk increases for 1%. The average milk price in Planika dairy will decrease for -0.49% if the price of consumption milk raises for 1% (Prišenk, 2015). The results forecast the more "stable" milk price in Planika dairy compared to average milk price in Slovenia. However, more important piece of information is the difference between the milk prices (Planika dairy vs. average milk price in SLO) which is 0.04 €. If we suppose that the average milk productivity per cow is 8000 l/year, it means 320 € higher farmers' income per cow per year. Further, if the farmers' herd is 20 dairy cows it means 6400 € additional farm income per year. The high economic benefits belong to the farmers which are the members of Planika Value-based food chain.

Farmers as strategic players – analyses results

There are approximately 120 to 140 farms producing the high-quality raw milk. The main and the only processor in the chain is Planika dairy. Farmers mainly come from the Slovenian mountain areas, especially from the western and north-western part of Slovenia. From the Graph 2 can be seen that more than 40% of all dairy farms in north-western part of Slovenia (statistical region of Agricultural and Forestry institute in Nova Gorica) are part of Planika VBFC in 5 years period (2009-2013). During this period the number of farms decreased, but on the other hand the percentage of farmers including in VBFC increased during the last two observed years (2012 and 2013). Moreover, in 2013 this percentage was the largest over the period under the scrutiny here (Table 1).

Graph 2: Number of dairy cows herds in Nova Gorica statistical region compared to number of dairy cows herds in Planika VBFC between 2009 and 2013 (KIS 2010-2014)

Table 1: Percentage of dairy farms included in Planika VBFC milk system collection

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
<th>change/decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>44.28</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>43.79</td>
<td>▼</td>
</tr>
<tr>
<td>2011</td>
<td>40.82</td>
<td>▼</td>
</tr>
<tr>
<td>2012</td>
<td>42.67</td>
<td>▲</td>
</tr>
<tr>
<td>2013</td>
<td>44.61</td>
<td>▲</td>
</tr>
</tbody>
</table>

Open and ongoing communication with transparency component – analyses results

The milk is bought from the farmers directly by the Agricultural cooperative Tolmin and transported to Planika dairy. The direct network (communication) exists between producers and Agricultural cooperative, and between processor and Agricultural cooperative. There is a lack of direct communication and networking between the producers and processor. The main and most powerful actor in food chain is Planika dairy which maintains the processing and selling systems to this date. Planika dairy enjoys the confidence among
both producers and consumers. Agricultural Cooperative Tolmin coordinates transactions between farmers and the Planika dairy (processor). The dairy coordinates transactions between itself (processor) and its selling points (retailers), and they have decision-making power about business movements in the chain and the main responsibility for the other actors in this value-based food chain. Planika buys the raw material from the farmers, and the negotiations about the purchase price of milk occur between Agricultural Cooperative Tolmin and the farmers.

The most frequent communication type is contractual agreement and email communication. These types (especially contracts) are the most trustful obligations between the actors. An analysis of interactions between the actors inside the value-based agro-food chain revealed well-developed communication about the quality of food and raw materials, using different modes of communication (i.e. phone calls, contractual agreements and email/personal communication). Actors intensively communicate with each other, especially with the actors before and after them in the chain, while a weakness was detected in communicating activities along the entire chain and, in particular, the communication between consumers and producers (Figure 2).

The networking analyses of Planika VBFC

CONCLUSIONS
The main conclusions can be summarized as follows:

- The Planika agro-food chain has positive socio-economic effects on dairy farms from mountain regions.
- The Planika value-based agro-food chain’s organizational structure represents a successful example of agro-food chain development processes, which is based on “healthy” relationships between the actors.
- A key actor (i.e. Planika dairy), according to our findings, is essential for an effective development process of value-based agro-food chains, as this actor manages and coordinates the obligations and responsibilities of other actors in the chain.
- The frequency and type of communication are crucial in building trust and sound relationships between the actors, consequently bringing about positive effects on further developmental processes in the chain.

One of the key approaches in any successful agro-food chain development process is a focus on developing valid relationships between actors inside the chain. If healthy relationships are damaged, the chains’ competitiveness could be endangered. This issue has also been highlighted by the Slovene policy makers, who have proposed the institution of ombudsman shall be established in agro-food chains. The ombudsmen would mainly be responsible for implementing payment discipline and for respecting the payment deadlines. These two bottlenecks are namely seen as crucial problems alongside the Slovenian agro-food chains.

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REFERENCE


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