

DOMESTIC DAIRY PRODUCTS: DETERMINATION OF MARKET SHARE ON THE INTERNAL MARKET OF LITHUANIA

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Abstract

As alternative approach to the globalized and complex food system, the local or national food systems, which are expected to bring environmental, economic and social benefits, are often presented. This study aimed to present the methodology for the precise calculation of market shares of all and individual domestic dairy products on the internal market, to calculate the market shares of all domestic dairy products, drinking milk, butter and cheeses in Lithuania over the last years (from 2012 to 2016) and to analyse the underlying causes of market share changes. Between 2012 and 2016, the market share of all domestic dairy products in Lithuania decreased from 85% to 82%. The underlying cause of market share changes was linked to the differences in prices between domestic and imported dairy products.

Key words: local food, domestic food, dairy products, domestic dairy products, market share, Lithuania.

INTRODUCTION

The agriculture and food system has become increasingly globalized and complex. Over the past decades, international trade in agricultural and food products has increased considerably. That trade has shifted from agricultural raw materials and basic food staples to processed and branded food products [6; 21]. Income growth and intensive liberalization of trade, which took place in various economic regions, especially in Europe, have been the main causes of world trade growth in agricultural and food products [22].

The current food system is characterized by a process of distancing [3; 9; 23]. Consumers are disconnected from producers through three types of distance: spatial, temporal and psychological. Spatial distance indicates the physical disconnection of consumers and producers. Food products, produced and processed in one part of the world, are often consumed in other parts of the world. A lot of resources are needed to process and transport food products. Temporal distance increases time between production and consumption due to preservation and storage of food products. These first two types of distances create psychological distance – a distance of mind [11]. Consumers do not know where food

comes from and how it produced and producers do not know who is buying the food they are producing [13].

The distance between food consumers and producers (both in miles and minds) is one of the main drivers of non-sustainability in the current food domain [17]. Local food systems represent alternative approach to the current food system, a system in which food travels long distances before reaches consumers. Locally produced food is often considered to be sustainable [10; 14; 24; 25].

A wide range of potential benefits are claimed to be derived when food is sold to consumers close to where it is produced. These benefits include environmental, economic, social, health aspects and in many ways are all related to the concept of sustainability [8; 12; 15; 16]. In environmental terms, benefits from local food systems may be delivered through reduced transport externalities (fossil fuel energy use, pollution, carbon dioxide emissions into the atmosphere), reduced specialization and intensification in agriculture, conservation of traditional agricultural landscapes, fostering of environmentally friendly production methods (organic production, protection of local biodiversity, reduced chemical inputs), reduced packaging and waste. The economic

benefits claimed for local production include increased the regional added value, creation of employment opportunities, better prices for consumers, greater incomes for farmers and food processors, reduced local dependencies on external market forces, economic spill-over, business skills development. There are many social benefits from local food systems, the most important of which are greater trust and connectedness between consumers and producers, maintenance and keeping agriculture in the region, conservation of traditional production techniques and consumption patterns (cultural identity), increased security of food supply, increased awareness about environmental and social effects of consumption, raised social justice locally and internationally. Finally, local food is expected to provide a number of health benefits. Local food systems increase availability of food that is healthier, more nutritious, better in taste and fresher (because of shorter distances that food travels) than food from non-local food systems [2; 8; 12; 16; 19]. There is no single definition of local food system or local food. Most of them use physical definitions. Local food can be defined in terms of geographical distance that food travels from food production to consumption. There is no agreement on this distance which may range from 30 to 400 miles [8; 12; 16; 18]. Local food can also be defined by political or administrative boundaries like a county, region, state or whole country [4; 8; 16; 20]. What all of these definitions have in common is a sense that local food is geographically determined and that proximity is important [1]. To sum up, it could be concluded that local food can be defined as food that is produced, processed, traded and consumed within a particular geographical area. In the absence of a uniform definition of local area, the consumers are the ones who decide whether food comes from a local area or not [7].

In recent years, in many countries, consumers have become significantly concerned about the food they consume and where it comes from and how it produced. There has been a growing interest among consumers in local food systems that combine environmental,

economic and social factors. This trend provides an opportunity for countries, including Lithuania, to promote local food.

Lithuania, covering an area of 65,300 km², is a relatively small country. It is possible to drive the country in less than 4 hours. In terms of distance, the consumption of Lithuanian food products is relatively close to the production site. Therefore, domestic food products could be regarded as local. Besides, the results of the survey recently carried out in Lithuania show that the majority of Lithuanian consumers perceive local food as food produced within more than 100 km from their homes. The interviewed persons also strongly agree with the definition of local food as food produced in Lithuania. As most of consumers consider Lithuanian made food as local, the term local food may be understood similarly to domestic food [5].

There are a large number of different food products that are produced in Lithuania. The Lithuanian agricultural sector is diverse. It covers a wide range of livestock and plant cultivation sub-sectors. The major parts in the structure of total agricultural production belong to grain and milk (in 2015, with a percentage of 39.7% and 17.2%, respectively). The dairy sector historically and traditionally has been, and remains, one of the most important agricultural activities in Lithuania. Favourable natural conditions, stocks of feedstuffs, traditions and experience in dairy production have laid down a solid foundation for the development of dairying.

The dairy processing industry is one of the modern sectors of the food industry in Lithuania and is capable of supplying 100% of the Lithuanian demand. This industry exports almost half of its production. The production capacity of Lithuanian dairy processing enterprises is larger than the supply of raw milk from domestic milk producers, and therefore about 20% of raw milk is imported.

A variety of dairy products are produced for domestic and export markets and these include fresh dairy products, cheeses, butter, condensed milk and other products. At the European Union level, *Lietuviškas varškės sūris* (unripened curd cheese) and *Liliputas*

(handmade, high-fat (50% in dry matter), semi-hard cheese) are recognized under the label of Protected Geographical Indication and *Žemaitiškas kاستینys* (dairy product from sour cream) under the label of Traditional Speciality Guaranteed.

Milk and dairy products are among the products that form the basis of the Lithuanian diet. There are some traditional dairy products, such as sour cream, cottage cheese, sweet curd cheese, fried cottage cheese, dried curd cheese, curdled milk, which are appreciated and liked by consumers.

The majority of dairy products, sold on the internal market, are produced in Lithuania, but the availability of foreign-made dairy products is increasing in recent years. Lithuanian consumers can choose between domestic and imported dairy products, therefore it is of particular interest to determine the market share of domestic dairy products on the internal market and to examine market share changes over time.

MATERIALS AND METHODS

This study aimed to present the methodology for the precise calculation of market shares of all and individual domestic dairy products on the internal market, to calculate the market shares of all domestic dairy products, drinking milk, butter and cheeses in Lithuania over the last years (from 2012 to 2016) and to analyse the underlying causes of market share changes. The methodology for the calculation of market shares of all and individual domestic dairy products on the internal market over a certain period is created, taking into account the accessibility of statistical data and the specifics of the presentation of statistical data. For this reason, own-produced and consumed dairy products as well as dairy products, sold directly by the milk producers to the final consumers, are excluded from the calculations. All calculations are based on data from the Lithuanian Department of Statistics (Statistics Lithuania).

For the purposes of the calculation of market share for all domestic dairy products on the internal market, the statistical data in value terms are used, as only in this way, the data are

comparable. In order to calculate the value of domestic and imported dairy products, wholesale prices are used as the statistical data to calculate the value in retail prices are not available. For the purposes of the calculation of market shares for individual domestic dairy products on the internal market, the statistical data in volume terms are used. The calculations in volume terms are more precise since in these cases the error due to effects of prices is avoided (usually prices of dairy products fluctuate over a very wide range).

The market share of all domestic dairy products on the internal market is calculated according to the formula:

$$MS_{\text{domestic dairy prod.}} = \left(\frac{V_{\text{domestic dairy prod.}}}{V_{\text{dairy prod.}}} \right) \times 100;$$

In this formula:

$MS_{\text{domestic dairy prod.}}$ – market share of all domestic dairy products on the internal market, %;

$V_{\text{domestic dairy prod.}}$ – total value of all domestic dairy products, sold on the internal market, EUR;

$V_{\text{dairy prod.}}$ – total value of all dairy products, sold on the internal market, EUR.

The total value of all dairy products, sold on the internal market, is calculated according to the formula:

$$V_{\text{dairy prod.}} = V_{\text{domestic dairy prod.}} + IV_{\text{dairy prod.}} - IV_{\text{raw milk}} - (REV_{\text{dairy prod.}} - REV_{\text{raw milk}});$$

In this formula:

$IV_{\text{dairy prod.}}$ – total import value of all dairy products, EUR;

$IV_{\text{raw milk}}$ – total import value of milk and cream, not concentrated nor containing added sugar or other sweetening matter, of a fat content, by weight, exceeding 3% but not exceeding 6%, in immediate packings of a net content exceeding 2 litres, EUR;

$REV_{\text{dairy prod.}}$ – total re-export value of all dairy products, EUR;

$REV_{\text{raw milk}}$ – total re-export value of milk and cream, not concentrated nor containing added sugar or other sweetening matter, of a fat content, by weight, exceeding 3% but not

exceeding 6%, in immediate packings of a net content exceeding 2 litres, EUR.

The total import value of milk and cream, not concentrated nor containing added sugar or other sweetening matter, of a fat content, by weight, exceeding 3% but not exceeding 6%, in immediate packings of a net content exceeding 2 litres, hereinafter referred to as raw milk, is deducted from the total import value of all dairy products since this milk includes raw milk. Raw milk is not yet a dairy product, it is a raw material for the production of dairy products and enters the dairy processing enterprises for further processing and should not therefore be included in the dairy market.

For the purposes of the calculation of market shares for individual domestic dairy products on the internal market, the methodology is different for milk and cream, that include raw milk, and for other dairy products.

The market share of domestic milk and cream, that include raw milk, on the internal market is calculated according to the formula:

$$MS_{\text{dom. milk and cream } i} = \left(\frac{Q_{\text{dom. milk and cream } i}}{Q_{\text{milk and cream } i}} \right) \times 100;$$

In this formula:

$MS_{\text{milk and cream } i}$ – market share of domestic milk and cream i on the internal market, %;

$Q_{\text{dom. milk and cream } i}$ – total volume of domestic milk and cream i , sold on the internal market, tonnes;

$Q_{\text{milk and cream } i}$ – total volume of milk and cream i , sold on the internal market, tonnes.

Total volume of milk and cream i , sold on the internal market, is calculated according to the formula:

$$Q_{\text{milk and cream } i} = Q_{\text{dom. milk and cream } i} + IQ_{\text{milk and cream } i} - IQ_{\text{raw milk}} - (REQ_{\text{milk and cream } i} - REQ_{\text{raw milk}});$$

In this formula:

$IQ_{\text{milk and cream } i}$ – total import volume of milk and cream i , tonnes;

$IQ_{\text{raw milk}}$ – total import volume of raw milk, tonnes;

$REQ_{\text{milk and cream } i}$ – total re-export volume of milk and cream i , tonnes;

$REQ_{\text{raw milk}}$ – total re-export volume of raw milk, tonnes.

The market share of other domestic dairy products on the internal market is calculated according to the formula:

$$MS_{\text{domestic dairy prod. } i} = \left(\frac{Q_{\text{domestic dairy prod. } i}}{Q_{\text{dairy prod. } i}} \right) \times 100;$$

In this formula:

$MS_{\text{domestic dairy prod. } i}$ – market share of domestic dairy product i on the internal market, %;

$Q_{\text{domestic dairy prod. } i}$ – total volume of domestic dairy product i , sold on the internal market, tonnes;

$Q_{\text{dairy prod. } i}$ – total volume of dairy product i , sold on the internal market, tonnes.

Total volume of dairy product i , sold on the internal market, is calculated according to the formula:

$$Q_{\text{dairy prod. } i} = Q_{\text{domestic dairy prod. } i} + IQ_{\text{dairy prod. } i} - REQ_{\text{dairy prod. } i};$$

In this formula:

$IQ_{\text{dairy prod. } i}$ – total import volume of dairy product i , tonnes;

$REQ_{\text{dairy prod. } i}$ – total re-export volume of dairy product i , tonnes.

RESULTS AND DISCUSSIONS

The market share of all domestic dairy products in Lithuania from 2012 to 2016 is shown in Table 1.

Table 1. The market share of all domestic dairy products in Lithuania from 2012 to 2016

	2012	2013	2014	2015	2016
Value of all domestic dairy products, sold in Lithuania, mill. EUR	376.8	356.7	360.2	355.1	391.3
Import value of all dairy products, minus re-export value of all dairy products and import value of raw milk, mill. EUR	66.2	88.6	107.2	94.9	84.2
Market share of all domestic dairy products in Lithuania, %	85	80	77	79	82

Source: Own calculation.

In 2012, all domestic dairy products held a share of 85% of the total value of all dairy products supplied in Lithuania. This market share decreased to 80% in 2013 and to 77% in 2014, but increased to 79% in 2015 and to 82% in 2016.

In 2013, as compared to 2012, the total value of all domestic dairy products, sold in Lithuania, declined by 5.3%, while the total import value of all dairy products, including the total import value of ice cream, lactose, casein, but excluding the total import value of raw milk and the total re-export value of all dairy products, rose by 33.8%. When the total value of all domestic dairy products, sold in Lithuania, decreased and the net import value of all dairy products increased significantly, the market share of all domestic dairy products in Lithuania fell by 5 percentage points to 80% in 2013. In 2014, as compared to 2013, the total value of all domestic dairy products, sold in Lithuania, grew by 1.0%, but the net import value of all dairy products rose by 21.0%, therefore the market share of all domestic dairy products in Lithuania dropped by 3 percentage points to 77%. Between 2015 and 2016, the net import value of all dairy products decreased slightly more than by 11% per year, while the total value of all domestic dairy products, sold in Lithuania, decreased by 1.4% in 2015 but increased by 10.2% in 2016. Consequently, the market share of all domestic dairy products in Lithuania rose by 2 percentage points to 79% in 2015 and by 3 percentage points to 82% in 2016.

Table 2. The market share of domestic drinking milk in Lithuania from 2012 to 2016

	2012	2013	2014	2015	2016
Volume of domestic drinking milk, sold in Lithuania, thou. t	94.7	92.9	93.7	96.5	94.5
Import volume of drinking milk, minus re-export volume of drinking milk and import volume of raw milk, thou. t	10.6	20.1	17.5	18.8	23.6
Market share of domestic drinking milk in Lithuania, %	90	82	84	84	80

Source: Own calculation.

Between 2012 and 2014, market share changes of domestic drinking milk in Lithuania resulted from development of the import volume of drinking milk, minus the re-export volume of drinking milk and the import volume of raw milk. The net import volume of drinking milk rose by 89.6% in 2013, fell by 12.9% in 2014, but grew by 7.4% in 2015 and by 25.5% in 2016. The total volume of domestic drinking milk, sold in Lithuania, decreased and increased within the 1–2% limit over the period under consideration with the exception of 2015, when this volume rose by 3.0%.

The market share of domestic butter in Lithuania from 2012 to 2016 is shown in Table 3. In 2012, domestic butter held a share of 83% of the total volume of butter supplied in Lithuania. This market share decreased to 80% in 2013 and to 74% in 2014, increased to 77% in 2015 and remained stable in 2016.

Between 2012 and 2014, the market share of domestic butter in Lithuania dropped due to the weakened positions of Lithuanian dairy processors and higher import volume of butter. In 2015, as compared to 2014, the increase in market share of domestic butter in Lithuania was a result of increased sales volume of Lithuanian dairy processors. In 2016, as compared to 2015, the total volume of domestic butter, sold in Lithuania, rose at the same pace as the total import volume of butter, therefore the market share of domestic butter in Lithuania remained stable.

The market share of domestic drinking milk in Lithuania from 2012 to 2016 is shown in Table 2. In 2012, domestic drinking milk held a share of 90% of the total volume of drinking milk supplied in Lithuania. This market share decreased to 82% in 2013, increased to 84% in 2014, remained stable in 2015 and decreased to 80% in 2016.

The market share of domestic cheeses in Lithuania is shown in Table 4. In 2012, domestic cheeses held a share of 87% of the total volume of cheeses supplied in Lithuania. This market share decreased to 81% in 2013, increased to 82% in 2014, remained stable in 2015 and increased to 83% in 2016.

Table 3. The market share of domestic butter in Lithuania from 2012 to 2016

	2012	2013	2014	2015	2016
Volume of domestic butter, sold in Lithuania, thou. t	74.3	64.5	65.2	74.6	88.6
Import volume of butter, minus re-export volume of butter, thou. t	1.5	1.6	2.3	2.2	2.6
Market share of domestic butter in Lithuania, %	83	80	74	77	77

Source: Own calculation.

Table 4. The market share of domestic cheeses in Lithuania from 2012 to 2016

	2012	2013	2014	2015	2016
Volume of domestic cheeses, sold in Lithuania, thou. t	43.7	42.3	41.7	43.5	46.4
Import volume of cheeses, minus re-export volume of cheeses, thou. t	6.8	10.1	9.0	9.7	9.6
Market share of domestic cheeses in Lithuania, %	87	81	82	82	83

Source: Own calculation.

Between 2012 and 2015, the total volume of domestic cheeses, sold in Lithuania, developed more steadily, and only in 2016, as compared to 2015, this volume rose by 6.7%. The net import volume of cheeses increased by 48.5% in 2013, decreased by 10.9% in 2014, rose by 7.8% in 2015 and fell by 1.0% in 2016. Taking into account these developments, the market share of domestic cheeses in Lithuania fluctuated over the period under consideration. As regards the period 2012–2016, the market share of all domestic dairy products in Lithuania had been on a downward trend, despite the fact that this share increased between 2015 and 2016 but did not reach the level of 2012. Those changes were caused by the differences in prices between domestic and imported dairy products. Although some

foreign-made dairy products were imported into Lithuania to supplement the range of domestic dairy products, however a significant part of foreign-made dairy products were imported due to lower prices, especially since 2013, when the prices of dairy products, sold by Lithuanian dairy processors on the internal market, increased a lot during the year (in December 2013, as compared to the same month in 2012, these prices rose by 13.8%). The price comparison between the domestic price and the import price of butter is shown in Table 5. The average wholesale price of butter, sold by Lithuanian dairy processors on the internal market, was higher than the average import price of butter each year over the period 2012–2015 (by 6.3% in 2012, by 8.5% in 2013, by 3.2% in 2014, by 8.5% in 2015), and only in 2016, the price of domestic butter was lower than the price of imported butter (by 1.5%).

Table 5. The average prices of butter, sold in Lithuania, from 2012 to 2016

	2012	2013	2014	2015	2016
Average wholesale price of Lithuanian dairy processors, EUR/kg	3.70	4.23	3.90	3.56	3.32
Average import price, EUR/kg	3.48	3.90	3.78	3.28	3.37

Source: Statistics Lithuania.

The price comparison between the domestic prices and import prices of certain cheeses is shown in Table 6. In 2012, the prices of most imported cheeses were higher than the wholesale prices of cheeses, sold by Lithuanian dairy processors on the internal market, indicating that foreign-made cheeses were imported into Lithuania to supplement the range of domestic cheeses. The situation changed in 2013, when the prices of domestic cheeses, except the prices of blue-veined cheeses, were higher than the prices of imported cheeses, indicating that foreign-made cheeses were imported into Lithuania due to lower prices. Only in 2016, the average price of imported fermented cheeses was higher than the average price of domestic fermented cheeses.

As prices of dairy products on the world market fell, Lithuanian dairy processors undercut prices as well, but they did not regain the market share they had lost.

Table 6. The average prices of certain cheeses, sold in Lithuania, from 2012 to 2016

	Fresh cheeses, curd	Grated cheeses	Processed cheeses	Blue-veined cheeses	Fermented cheeses
Average wholesale price of Lithuanian dairy processors, EUR/kg					
2012	2.89	8.14	3.34	4.73	3.68
2013	2.99	7.93	3.57	5.16	4.28
2014	3.14	7.93	3.63	5.28	3.14
2015	2.94	7.60	3.39	5.39	3.69
2016	2.88	7.61	3.34	5.23	3.48
Average import price, EUR/kg					
2012	2.54	4.09	3.45	6.22	3.91
2013	2.59	4.47	3.53	6.16	4.10
2014	2.49	3.90	3.50	6.62	2.49
2015	2.45	5.30	3.24	6.10	3.62
2016	2.48	5.30	3.14	6.54	3.54

Source: Statistics Lithuania.

CONCLUSIONS

The food system has become more and more globalized and complex. As alternative approach to the current food system, the local food systems are often presented. Local food is perceived to provide a range of environmental, economic and social benefits. As Lithuania is a relatively small country, therefore domestic food could be regarded as local.

This study presents the methodology for the precise calculation of market shares of all and individual domestic dairy products on the internal market. The results obtained using this methodology are very useful for domestic dairy processors in the development of marketing strategies for their products and for government in launching various campaigns to support the national food sector.

In this study, the market shares of all and individual domestic dairy products in Lithuania over the last years were calculated and the underlying causes of market share changes were analysed. Between 2012 and 2016, the market share of all domestic dairy products in Lithuania decreased from 85% to 82%. The underlying cause of market share changes was linked to the differences in prices between domestic and imported dairy products. This was particularly obvious in 2013, when the prices of domestic dairy

products increased at a higher rate than the prices of imported dairy products compared to the previous year, therefore the market share of all dairy products in Lithuania dropped from 85% to 80%. In 2016, as compared to 2015, when domestic dairy products became cheaper than imported dairy products, the market share of all dairy products in Lithuania rose from 79% to 82%.

REFERENCES

- [1]Allen, P., 2010, Realizing justice in local food systems. Cambridge Journal of Regions, Economy and Society, rsq015.
- [2]Blouin, C., Lemay, J. F., Ashraf, K., Imai, J., Konforti, L., 2009, Local food systems and public policy: a review of the literature. Equiterre & The Centre for Trade Policy and Law, Carleton University.
- [3] Dyck, B., 1994, From airy-fairy ideas to concrete realities: The case of shared farming. The Leadership Quarterly, 5(3-4), 227-246.
- [4]Edwards-Jones, G., 2010, Does eating local food reduce the environmental impact of food production and enhance consumer health? Proceedings of the Nutrition Society, 69(04), 582-591.
- [5]Eičaitė, O., Dabkienė, V., 2015, Local food: Lithuanian consumers' perceptions and attitudes. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, 65-70.
- [6]Ercsey-Ravasz, M., Toroczkai, Z., Lakner, Z., Baranyi, J., 2012, Complexity of the international agro-food trade network and its impact on food safety. PLoS one, 7(5), e37810.
- [7]European Commission. 2013, Report from the Commission to the European Parliament and the Council on the case of local farming and direct sales labelling scheme. COM(2013) 866 final. Brussels.
- [8] Jones, P., Comfort, D., Hillier, D., 2004, A case study of local food and its routes to market in the UK. British Food Journal, 106(4), 328-335.
- [9] Kneen, B., 1993, From land to mouth. University of Toronto Press: Toronto.
- [10]Leitzmann, C., 2003, Nutrition ecology: the contribution of vegetarian diets. The American journal of clinical nutrition, 78(3), 657S-659S.
- [11]Lieblein, G., Francis, C. A., Torjusen, H., 2001, Future interconnections among ecological farmers, processors, marketers, and consumers in Hedmark County, Norway: creating shared vision. Human Ecology Review, 8(1), 60-71.
- [12] Martinez, S., 2010, Local food systems; concepts, impacts, and issues. Diane Publishing.
- [13]Nilsson, H., Mont, O., 2010, Socioeconomic aspects of farmers' markets in Sweden. System innovation for sustainability: case studies in sustainable consumption and production-food and agriculture: Vol. 3, 103-118.
- [14] Pack, A., Friedl, B., Lorek, S., Jäger, J., Omann, I.,

Stocker, A., 2006, Sustainable Food Consumption: Trends and Opportunities. Sufo. trop. Interim Report. Graz and Vienna.

[15] Pearson, D., Bailey, A., 2009, June). Sustainable horticultural supply chains: The case of local food networks in the United Kingdom. In XVI International Symposium on Horticultural Economics and Management 831 (pp. 131-138).

[16] Pearson, D., Henryks, J., Trott, A., Jones, P., Parker, G., Dumaresq, D., Dyball, R., 2011, Local food: understanding consumer motivations in innovative retail formats. *British Food Journal*, 113(7), 886-899.

[17] Reisch, L., Eberle, U., Lorek, S., 2013, Sustainable food consumption: an overview of contemporary issues and policies. *Sustainability: Science, Practice, & Policy*, 9(2).

[18] Rose, N., Serrano, E., Hosig, K., Haas, C., Reaves, D., Nickols-Richardson, S. M., 2008, The 100-mile diet: a community approach to promote sustainable food systems impacts dietary quality. *Journal of Hunger & Environmental Nutrition*, 3(2-3), 270-285.

[19] Schönhart, M., Penker, M., Schmid, E., 2009, Sustainable local food production and consumption: challenges for implementation and research. *Outlook on agriculture*, 38(2), 175-182.

[20] Selfa, T., Qazi, J., 2005, Place, taste, or face-to-face? Understanding producer-consumer networks in "local" food systems in Washington State. *Agriculture and Human Values*, 22(4), 451-464.

[21] Senauer, B., Venturini, L., 2005, The globalization of food systems: A conceptual framework and empirical patterns (Vol. 5, No. 1). Food Industry Center, University of Minnesota.

[22] Serrano, R., Pinilla, V., 2010, Causes of world trade growth in agricultural and food products, 1951-2000: a demand function approach. *Applied Economics*, 42(27), 3503-3518.

[23] Sundkvist, Å., Milestad, R., Jansson, A., 2005, On the importance of tightening feedback loops for sustainable development of food systems. *Food Policy*, 30(2), 224-239.

[24] Tanner, C., Wölfling Kast, S., 2003, Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 20(10), 883-902.

[25] Vermeir, I., Verbeke, W., 2008, Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological economics*, 64(3), 542-553.