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MARKET ADJUSTMENTS OF FRUIT AND VEGETABLE PRODUCERS TO CHANGING DISTRIBUTION CHANNELS IN SELECTED EUROPEAN UNION COUNTRIES AFTER 2012

Key words: distribution channels, supply chain, groups/organizations of fruit and vegetable producers, retail chains

ABSTRACT. The purpose of the article was to indicate selected distribution channels in groups and organizations of fruit and vegetable producers in countries with different agrarian structures and cultures of horizontal organization, as well as identify differences in preferred distribution channels. Based on the literature review, changes in the supply chain of agri-food products were presented and the growing importance of retail chains was pointed out. Using the data obtained from the European Commission, the weight of individual distribution channels was presented, and by Ward agglomeration cluster analysis using Euclidean distances, 3 disjointed clusters of countries with different characteristics of fruit and vegetable producer groups/organizations were selected. The first cluster consisted of few producer groups/organizations from Great Britain, Denmark and Romania, whose members engaged in a relatively large area of land and dedicated (65%) their production to retail chains, thus obtaining, on average, higher effects (measured by sales value) attributable to both the group/organization and hectare of land. In contrast, the third cluster included producers from countries that are leaders in the production of fruit and vegetables in Europe, that is, from Spain, Italy, France and Poland. What was characteristic for them was that many members possessing a relatively small area of land joined groups/organisations. They dedicated their production (25%) to retail chains, and their advantage, which may affect the largest share of the average value of sales per member, is the processing of raw materials as part of their own operations.

INTRODUCTION

In Europe, the largest changes in supply chains of agri-food products were recorded after the economic transformation in the countries of Central and Eastern Europe. These changes affected both the supply and relationship between food producers, including fruit and vegetable producers, processors and sellers [Milczarek-Andrzejewska 2012]. Foreign investors (mostly from Western Europe) appeared on the retail and processing market. Processors and retailers faced the problem of insufficient quantity and quality of supply, as small and medium-sized producers did not have enough production volume or sufficient factor endowments [Czyżewski, Guth 2016]. Evolution in distribution chains in horticul-

ture has changed the chances and challenges faced by farmers, both as owners of farms and agricultural workers [Moran 2018, p. 14]. At the same time, consumer expectations have also changed, which is reflected in demand. In order to solve the mismatch problems on the supply and demand side, reform programmes aimed at adjusting the structure of supply chains began to be implemented.

As Jon H. Hanf and Taras Gagalyuk note [2018], such structural changes are most often accompanied by long-term processes of institutional adjustments involving, among others, the coordination of integration between transaction partners. Changes in the supply chain have become a common way of overcoming problems related to the insufficient supply and low quality of offered products. New procurement systems require suppliers to be able to guarantee uninterrupted deliveries of products of a specified, high quality. So, producers were forced to keep up with the expectations of recipients. In addition, in Central and Eastern Europe, the process of transforming the retail sector from state-owned stores and open bazaars into "more modern" large-format stores (often with capital and regular suppliers from Western Europe) has been noted. This gradual expansion is often referred to as "retail waves". In this context, the share of the supermarket sector in "first wave" countries increased from 5%, in the mid-1990s, to 50% by mid-2000. Such a high share of modern trading formats was observed in Hungary, Poland and the Czech Republic. "Second wave" countries, such as Bulgaria and Croatia, have a 20-30% share. "Third wave" countries, in turn, are those whose share in the supermarket sector did not exceed 5% of total retail turnover in mid-2000. Foreign retailers and investors "export" their business models and requirements to business partners. Traditional, local retail stores have been replaced with logistics centers that present their own food quality and safety standards to suppliers. As Estelle Biénabe and Denis Sautier [2005] point out, the characteristics of food products are no longer determined by producers but by traders, supermarkets and the agri-food industry. Small-scale producers do not usually have adequate knowledge, information or resources to meet their standards. In addition, these requirements often exceed the technical capabilities and organizational capabilities of these entities. Investments in meeting manufacturer requirements may be discouraged by a lack of formal contract (sales guarantee).

The need to meet expectations of recipients may encourage producers to integrate, especially in Central and Eastern Europe, where small producers form the basis of agriculture. Unfortunately, the level of market organization is still insufficient, as mental barriers (the sense of a loss of ownership and freedom) resulting from historical events are still of great importance. In order to increase market competitiveness, it is important to promote the idea of merging small producers, especially in the inflow of imported products. In order to be successful, producers should offer higher, certified quality, produce by traditional methods, local varieties, or own branding. Moreover, by grouping producers into one entity that represents them on the market, the length of the supply chain is shortened. This is important from the point of view of quality and safety management of offered products. In short chains (often controlled by large retail stores), it is easier than in traditional, long chains involving more intermediaries and wholesalers. The results of research carried out by Jesús Hernández-Rubio and others [2018] have revealed the positive impact of certain groups of customers (large retailers) on the establishment of stricter security control. In

order to meet the expectations of customers, they often require manufacturers to have certificates confirming the quality and safety of offered products (eg GlobalGap, British Retail Consortium-BRC, International Food Standard – IFS). The influence of possessed certificates on increasing the efficiency of functioning and access to more attractive distribution channels is confirmed by Maryla Bieniek-Majka and Anna Matuszczak [2017, p. 156]. In their study, in Poland, among Kujawsko-Pomorskie voivodship fruit producers/producer groups, by means of logit regression, it was determined that the chance of gaining competitive advantage increases by 66% when a certificate confirming the quality and safety of fruit and vegetables offered by a producer are obtained.

MATERIAL AND METHODS OF RESEARCH

Based on the library query, changes in the supply chain of agri-food products were presented. In response to growing market demands, fruit and vegetable producers started to create producer groups/organizations. Using the data obtained from the European Commission from the annual reports on the activities of fruit and vegetable groups/organizations, in the years 2012-2016, selected distribution channels were presented. In order to determine the differences in preferred distribution channels in groups and organizations of fruit and vegetable producers in selected countries with a different agrarian structure and different culture of horizontal organization, the agglomeration Ward cluster analysis using Euclidean distances was performed, in which the share of sales in supermarket chains in total sales and the number of integrated fruit and vegetable producers in a given country were considered as grouping variables. As part of the above-mentioned procedure, three separate clusters of countries with different characteristics of groups and organizations of fruit and vegetable producers were selected and then compared.

RESULTS

Due to prevailing nutritional trends, lifestyle diseases as well as the pace of life, both fresh fruit and vegetable products are enjoying the growing interest of buyers on the market. In the European Union, fresh fruit and vegetables are one of the most important items in food trade. In 2017, the value of intra-Community trade in fruit and vegetables amounted to more than EUR 48,300 million, and the value of imports of fruit and vegetables from non-EU countries amounted to another EUR 25,200 million. The supply chain of fresh and perishable fruit and vegetables is heterogeneous [Hernández-Rubio et al. 2018]. The organizational structure of the EU market for horticultural products is diverse. The garden market of the so-called ‘old Union’ is dominated by producer groups and organizations with a long-established market position and economic strength, to which numerous instruments supporting the development of these types of structures and further consolidation processes are addressed. Unfortunately, from an economic point of view, gardeners from other EU countries are no longer in such a convenient situation. In Central and Eastern Europe, after the period of economic transformation, the majority of farms did not have sufficient strength and/or economic position. Over time, their situation, sup-

ported by numerous financial and legal activities of government and EU agencies, slightly improved and stabilized. Gardeners began to organize themselves into producer groups/organizations or independently develop their own farms looking for the most convenient distribution channels independently [Lipińska, Stefko 2014 p. 8]. As noted by Dominika Milczarek-Andrzejewska [2012 p. 110], changes that took place in food supply chains had both a negative and positive impact on the situation of small farms. Among main solutions strengthening the position of small farms in this chain, the author mentions: increasing access to financial services, introducing measures aimed at supporting investment in farms and supporting the creation of producer groups and other organizations representing the interests of farmers. In her opinion, the cooperation of small producers can be crucial to improving their access to modern distribution channels. Unfortunately, after limiting the institutional support of integration processes on the fruit and vegetable market, a decrease in both the number of organizations and members associated with them was observed [Matuszczak, Bieniek-Majka 2018, p. 185, Kotyza et al. 2018, p. 142].

Global integration has led supermarkets to become the main actors in the food supply chain. Consumer expectations, their growing concerns about food quality and safety, as well as interest in production conditions not only in the socio-economic but also environmental aspect have contributed to this phenomenon. Increasing revenue and the pursuit of diversity and convenience among consumers has led to the need to increase product differentiation and market segmentation. On the supply side, agricultural products are sold as standardized goods, suitably differentiated, which are increasingly valued for their special features and quality. Concentration in the supply chain of horticultural products has an impact on producers (often fragmented) who have to adapt their production methods to meet customer requirements. Structural changes in food markets have increased the need for vertical coordination in supply chains. Greater vertical coordination means that the activities and investments of individual business entities (such as manufacturers, processors, traders and retailers) in the chain become more strict. This coordination requires an exchange of information, not only concerning the size of supply and demand, but also the quality requirements of retail customers and end consumers, and also improves logistic efficiency. In addition, in the situation of introducing new products to the market, a coordinated effort and the commitment of all entities in the chain is desirable [Bijman et al. 2011, p. 82-83]. So the question arises – can affiliated producers efficiently and effectively cope with the growing importance of vertical coordination in the supply chain for the agri-food sector? It is difficult to find an unambiguous answer because these producers use different combinations of coordination mechanisms. However, which of the mechanisms is dominant depends on organizational characteristics, such as the size and heterogeneity of members, market share and the resulting conditions in the chain. In the case of the development of producer organizations (increasing the number of members), when the group becomes more heterogeneous or if there is a need to increase coordination, benefits become harder to obtain. As Jos Bijman and others [2011, p. 97-98] claim, obstacles can be overcome by establishing a hierarchy and transferring more decision-making powers. Although hierarchy may be needed to achieve stronger coordination, it should be used with caution, as it is contrary to the idea of voluntary membership, shared interests and participation in the decision-making process.

To what extent integrated fruit and vegetable producers in Europe respond to market needs can be assessed on the basis of distribution channels that supply their products. In order to determine the differences in distribution channels preferred by them, an agglomeration cluster analysis was carried out using the Ward method. In this way, 3 separate clusters of countries with different characteristics of groups and organizations of fruit and vegetable producers were selected (see Figure 1). The most numerous was cluster 2, which included 12 countries. However, the most interesting seem to be clusters No. 1 and No. 3, whose numbers are similar. Cluster 3 included the leaders in the production of fruit and vegetables in Europe, namely Spain, Italy, France and Poland. Subjectively, one could say that such countries as: Italy Spain and France have been leaders in the production of fruit and vegetables for years, thus the efficiency obtained from established supply chains should be a benchmark for producers from other countries. Whether or not this is true shall be discussed further in the discussion.

What is surprising is the fact that there are Polish producers who belong to groups and organizations classified in this cluster. Polish producers owe such closeness to leaders, on the one hand, to an agrarian structure and tradition in the production of fruit and vegetables and, on the other hand, the largest absorption of funds directed under the Common Agricultural Policy on the fruit and vegetable market supporting structural changes. Considering the fact that Poland has become a group of countries from the so-called "first

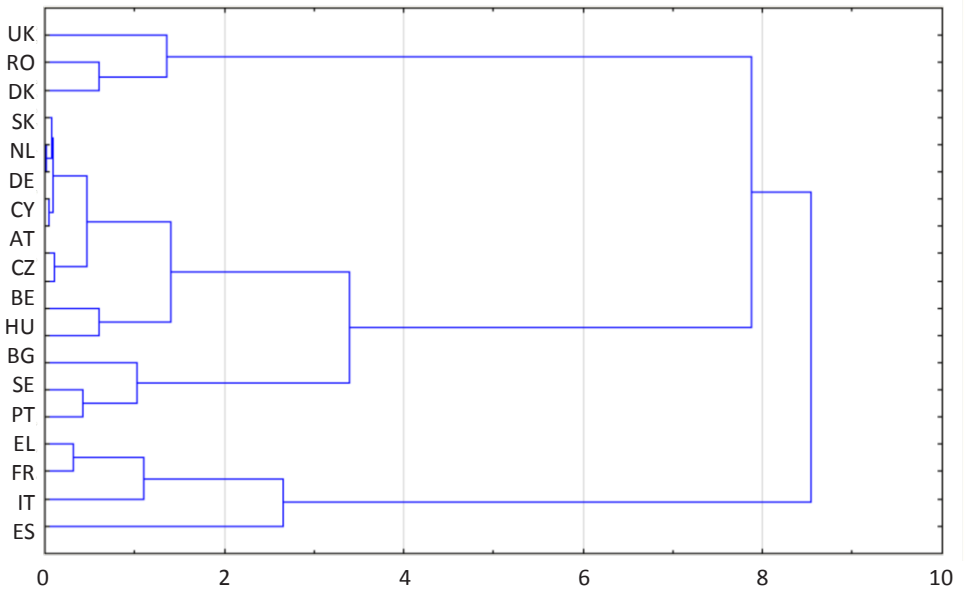

Figure 1. Clusters of selected European Union countries in terms of the number of producers in groups and organizations of fruit and vegetable producers and the share of sales in supermarket chains of these groups in 2012-2016

Source: own study based on data from annual reports obtained from the European Commission for the years 2012-2016

Table 1. Features of separated clusters of selected European Union countries in terms of the number of producers in groups and organizations of fruit and vegetable producers and the share of sales of these groups in supermarket chains in 2012-2016

Specification		Cluster 1	Cluster 2	Cluster 3
		%		
Share of individual distribution channels of fresh products in total sales of producer groups	supermarket chains	64.55	24.65	25,31
	wholesale	18.85	49.82	42,55
	retail trade	3.55	4.18	1,14
	other	3.51	5.13	14,87
Share of individual distribution channels of products intended for processing in total sales of producer groups	fresh products sold to the processing plant	8.55	9.99	10,31
	products processed by producer groups	0.43	3.17	5,73
Total value of products placed on the market (fresh and processed) [EUR]		376,745,531	377,693,145	4,482,141,246
Number of producer groups/organizations *		23.40	33.84	366.15
Area of agricultural land per producer *		30.28	11.38	10.25
Sales value per manufacturer *		626,725.40	56,466.66	88,987.26
Sales value per producer group/organization *		16,100,236.38	11,160,045.66	12,241,270.64
Sales value per hectare *		18,334.81	15,768.30	11,827.52
Number of members of the producer group/ organization		25.69	197.63	137.56

* average values

Source: own study based on data from annual reports made available by the European Commission for the years 2012-2016

wave" of supply chain evolution, it can be expected that cooperation between producers and retail chains has increased.

Based on the obtained data, it turns out that producer groups/organizations from these countries, to a large extent (about 25%), provide their products through modern distribution channels such as supermarket chains. However, in this respect, the countries grouped in the first cluster, namely Great Britain, Romania and Denmark, deserve special attention. One might be tempted to say that, in these countries, production is almost dedicated to recipients such as supermarket chains. The average share of retail chains in the value of sales in this group is almost 65%. So these countries can be considered as a benchmark. The possibilities of meeting quantitative requirements set by a large recipient may result from the specificity of these groups/organizations. On average, in these countries, groups/ organizations are visibly less numerous, and their members engage a much larger acreage of land for production for the group (the average area of land is almost three times larger than that characterized by producer groups/organizations in other, separate groups). In

addition, in this group, the highest average income per one group and each hectare of land for the production of fruit and vegetables was obtained.

A different sales policy is evidenced by the share of the value of production intended for processing. In cluster 3, it is observed that it not only has the highest sales value percentage from passing on raw materials for processing, but the highest share of products processed by producer groups. The share of the sales value obtained through this distribution channel in cluster 3 is almost 6 times larger than in cluster 1 and almost twice as large as in cluster 2. Confirmation that shortening the supply chain and eliminating further links in it allows producers to have greater effects is the average share of sales per member, which is the highest in cluster 3.

The most numerous cluster 2 consists of countries characterized by a small number of groups/organizations with a relatively high number of associated producers who have engaged a relatively similar size of acreage for fruit and vegetable production as members of groups/organizations from countries classified in cluster 3. Thanks to the integration of fragmented producers, Poland managed to generate a higher value from sales per one hectare than producers from relatively similar groups/organizations in terms of numbers from cluster 3. Unfortunately, by choosing a different distribution in the supply chain, they generated the lowest average revenue for both – per one producer and per one group/organization.

The characteristics of the effects of the groups/producer organizations measured by the sales value, taking into account their different characteristics and selection of distribution channels allow to indicate that the best results are obtained by producers with a large area merging into relatively small groups/organizations to ensure the appropriate quantity and quality of production dedicated to supermarket chains (cluster 1). It is also worth emphasizing that shortening the supply chain may be accomplished by processing raw material within the group/organization.

CONCLUSIONS

In Europe, in the last two decades, there have been dynamic changes in food chains resulting, among others, from changes initiated in the 1990s in the countries of Central and Eastern Europe. Privatization processes, the liberalization of markets and an inflow of foreign direct investment led to the consolidation of the processing industry, the growing importance of super- and hypermarket chains and the introduction of high quality standards. The response to changes on the demand side was the transformation of the agrarian structure. Despite some differences between countries, a dual agrarian structure is characteristic for them and visible in the coexistence of a significant number of small farms (especially in the countries of Central and Eastern Europe) and commodity farms.

The introduced economic reforms and the process of European integration have influenced the acceleration of the process of concentration and specialization of production. Unfortunately, in many countries, the degree of concentration is relatively small, and horizontal integration processes run too slowly on the side of agricultural producers in relation to consolidation processes on the side of recipients. So, we have to deal with a specific asymmetry of concentration. Promoting group activities can help improve the

position of producers in the supply chain. In a situation where centralized customers dictate the conditions on the market to producers, only those who are able to meet their expectations can benefit from scale effects. The second possibility of increasing the efficiency of producer functioning is to limit the links in the distribution channel and obtain added value from the processing of raw material. As a recommendation for legislative agendas that decide on institutional support for the fruit and vegetable sector, the necessity of providing incentives for the further creation of producer groups/organizations and for the development of processing processes within them should be underlined.

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DOSTOSOWANIA RYNKOWE PRODUCENTÓW OWOCÓW I WARZYW DO ZMIENIAJĄCYCH SIĘ KANAŁÓW DYSTRYBUCJI W WYBRANYCH KRAJACH UNII EUROPEJSKIEJ PO 2012 ROKU

Słowa kluczowe: kanały dystrybucji, łańcuch dostaw, grupy/organizacje producentów owoców i warzyw, sieci handlowe

ABSTRAKT

Celem artykułu jest wskazanie wybieranych kanałów dystrybucji w grupach i organizacjach producentów owoców i warzyw w krajach o różnej strukturze agrarnej i kulturze organizacji poziomej, a także określenie różnic w preferowanych kanałach dystrybucji. Na podstawie kwerendy bibliotecznej przedstawiono zmiany zachodzące w łańcuchu dostaw produktów rolno-żywnościowych oraz wskazano na rosnące znaczenie sieci detalicznych. Wykorzystano dane Komisji Europejskiej, pochodzące z corocznych sprawozdań dotyczących działalności grup/organizacji producentów owoców i warzyw w latach 2012-2016. Przedstawiono wagę poszczególnych kanałów dystrybucji. Za pomocą aglomeracyjnej analizy skupień metodą Warda z wykorzystaniem odległości euklidesowych wyłoniono 3 rozłączne względem siebie skupienia krajów o rożnej charakterystyce grup/organizacji producentów owoców i warzyw. W skład skupienia pierwszego wchodziły nieliczne grupy/organizacje producentów z Wielkiej Brytanii, Danii i Rumunii, których członkowie zaangażowali relatywnie duży areał ziemi i dedykowali (w 65%) swoją produkcję do sieci handlowych, uzyskując z tego tytułu średnio wyższe efekty (mierzone wartością sprzedaży), przypadające zarówno na grupę/organizację, jak i na każdy zaangażowany hektar ziemi. W skupieniu nr 3 znaleźli się producenci z krajów, które są liderami w produkcji owoców i warzyw w Europie – Hiszpania, Włochy, Francja i Polska. Charakterystyczny dla nich był fakt łączenia się w grupę/organizację bardzo wielu członków mających relatywnie niewielki areał ziemi. Swoją produkcję dedykowali w 25% do sieci handlowych, a ich przewagą, mogącą mieć wpływ na największy udział średniej wartości sprzedaży przypadającej na jednego członka, jest przetwarzanie surowca w ramach własnej działalności.

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