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ORGANIC FARMING DEVELOPMENT FOLLOWING THE ACCESSION TO THE EUROPEAN UNION: THE POLISH EXPERIENCE

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Abstract

This paper discusses the changes in Polish organic farming, with particular focus on changes in the number and area of organic farms, area structure and processing volumes. The timeframes of this study are the period of the Poland's membership in the European Union, i.e. 2004-2016. The analysis was based on IFOAM data and Polish organic agriculture reports published biannually by the General Agricultural and Food Quality Inspection (GIJHARS). This paper notes that the 2004-2016 period witnessed a quantitative growth of organic farming, as reflected by a dynamic increase in the area of organic farmland and in the number of farms. In the last three years, a decline in the area of organic agricultural land has been recorded due to changes in the conditions of environmental payments. In 2014-2015, a large part of farms discontinued their organic farming activities due to lack of production activities and market links. In Poland, despite a highly dynamic increase in organic farmland area and in the number of farms, the organic production and processing volumes continue to be low.

Keywords: *European Union, Poland, organic farming, organic production, changes.*

JEL classification: E23, Q01, Q57, Q 32, Q56

1 Introduction

Polish organic farming has been among the fastest growing sectors of food economy. This is reflected by the high growth rates (10-20%) of both the number of organic farms and of organic farmland area, as seen for more than a decade. This is how agricultural producers respond to growing demand from consumers who become increasingly interested in organic food as their incomes and health awareness grow. In 2015, the value of the Polish organic food market was estimated at around PLN 770 million, and went beyond PLN 1 billion in 2017. According to the 2014-2020 Framework Action Plan for Organic Food and Farming in Poland, that value is supposed to reach at least EUR 210 million. The average spending of a Polish consumer on organic food is EUR 4, much less than in the case of Danish or German consumers who spent, respectively, EUR 197 and EUR 105.9 in 2015 (Organic in Europe, 2016). It should be expected that the expenditure on organic food will follow a stronger growth trend as the income situation of Polish consumers improves. Organic food represents 0.5% (as at 2016) of the Polish food market which is a small share compared to other EU countries where it ranges from 3% to 8%. In the future, the organic farming model and the organic products market are highly likely to continue their growth because, on one hand, the food economy demonstrates an enormous (and not fully exploited) potential in this area, while on the other hand, demand pressure for organic food increases as the society becomes wealthier.

The development of organic farming following Poland's accession to the European Union has been the subject of many economic studies, focusing on four basic problems: 1/ organic farming vs. conventional farming in the context of sustainable development (Kociszewski, 2013, Komorowska, 2014), 2/ economic efficiency of organic farms (Nachtman, 2006, Nachtman, 2009, Nachtman, 2012, Komorowska, 2012), 3/ financial support for organic farming (Kondratowicz-Pozorska 2014, Łuczka-Bakuła 2013), 4/ development trends of organic farming in Poland (Golinowska 2013, Drabczyńska and Wrzesińska-Kowal, 2015, Komorowska, 2015). This paper addresses the fourth research topic listed above.

The previous studies indicate that the development of certified organic farming in Poland may be split into three periods with various growth rates of basic indicators.

The 1st stage extends from 1990 to 1997. Established in 1989, EKOLAND, the first Polish certification body for organic farming, conducted the first inspection in 1990, resulting in the certification of 27 farms. In 1993, organic farms were also certified by the Polish Organic Farming Association and by SKAL, a Dutch organization. In that period, organic farmers did not access any financial support from the

state budget; the number of organic farms increased from 27 to 324 in 1997. Farms were run by farmers demonstrating high levels of ecological awareness, strongly committed to environmental protection in the agriculture and rural areas.

The 2nd stage extended from 1998 to 2003. In 1998, for the first time, the organic agriculture sector was provided with financial support in the form of a partial reimbursement of farm inspection costs (the subsidy was granted to certification bodies). In 1999, agricultural area payments became available to operators of organic farms or farms under conversion from conventional to organic. In 1999, the amount of payments disbursed to 555 organic farms was PLN 674,273 which means an average payment of PLN 1,215 (EUR 300 approximately) per farm. That period marked the adoption of the organic farming act which governed the conditions for organic production and processing, defined the farm inspection and certification system, and specified the principles for product trading and labeling (Organic Farming Act of March 16, 2001).

In that period, organic farming was growing at a very slow rate because of poor profitability of organic production and insufficient organization of the organic product market. The fragmented output of the very few organic farms was sold in local markets based on traditional distribution channels. Despite favorable agri-technical conditions in the Polish agricultural sector (including the ease of farming conversion due to low quantities of chemicals used), the production volume failed to meet the growing demand. From 1998 to 2003, the number and area of organic farms more than quadrupled. The area of organic farmland increased to 49,928 ha in 2003, reaching 0.3% of the total agricultural land area. The number of organic farms increased from 417 in 1998 to 2,286, representing 0.11% of all agricultural holdings.

The 3rd stage covers the period of Poland's accession to the European Union (2004). This was a breakthrough for the development of Polish organic farming as the farmers became eligible for instruments available under the common agricultural policy and the national agri-environmental program. The support mechanisms helped improving the profitability of organic agricultural producers (Kodratowicz-Pozorska, 2014).

2 Data and Methods

The paper discusses the changes in the Polish organic farming with particular emphasis on increase in organic utilized agricultural area, number of farms, agricultural area structure and volume of processing. The characteristic feature of the organic farming development in Poland as well as barriers limiting organic food supply growth on domestic market were also determined. The paper attempts to find the answer the question about the reasons for the phenomenon of organic

farming in Poland consisting in sharp increase of the organic farms and area after 2004. The time range of the study includes the period of Poland's accession to the EU, i.e. years 2004-2016. The analysis was conducted based on the IFOAM data and reports on the state of organic farming in Poland published every two years by the General Agricultural and Food Quality Inspection (GIJHARS).

While elaborating the empirical data the basic methods of descriptive statistics, such as mean values, dynamics indicators and structure indicators were applied. These indicators were used in the analysis of changes between 2004 and 2016 in number of farms and organic utilized agricultural area (dynamics indicators), in the analysis of organic agricultural area structure (structure indicators) as well as in the analysis of the average area of the organic farms (mean values).

3 Results and Discussion

In 2016, thirteen years after Poland's accession to the EU, there were 22,435 organic farms with a total organic farmland area of 536 579 ha (Table 1).

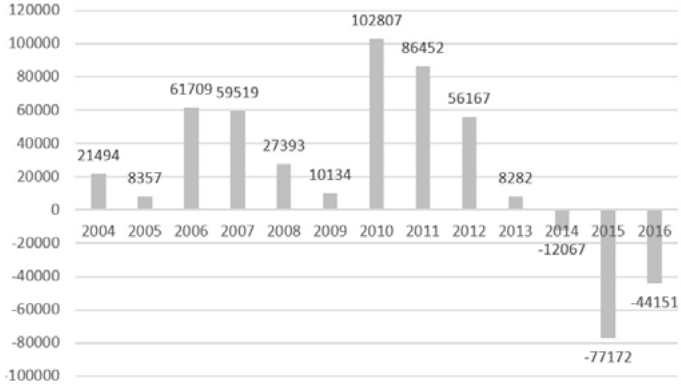
Table 1 **Number of organic farms and organic farmland area in Poland in 2004-2016**

Year	Number	Area (ha)	Average area of organic farms
2004	3,760	82,730	22.0
2005	7,183	166,300	23.2
2006	9,189	228,009	24.8
2007	11,870	287,528	24.2
2008	14,896	314,921	21.1
2009	17,091	416,261	24.4
2010	20,582	519,068	25.2
2011	23,449	605,520	24.5
2012	25,944	661,687	25.8
2013	26,598	669,969	25.2
2014	24,829	657,902	26.5
2015	22,277	580,730	26.1
2016	22,435	536,579	23.9

Source: Główny Inspektorat Jakości Handlowej Artykułów Rolno-Spożywczych. (2005). Rolnictwo ekologiczne w Polsce w 2004 roku. Warszawa; Główny Inspektorat Jakości Handlowej Artykułów Rolno-Spożywczych. (2017). Raport o stanie rolnictwa ekologicznego w Polsce w latach 2015-2016. Warszawa.

The highest increase in the area of organic farmland was reported in 2009-2010, with an increase by around 100,000 ha compared to previous year. Poland has the fifth largest area of organic farmland and the sixth largest number of organic farms in the European Union. From 2004 to 2016, the area of organic farmland increased by 548.9%, from 82,700 ha to 536,600 ha (Figure 1). Note that 2014 marked the first decrease in the area of organic farmland since the accession to the European Union. The downward trend continued in 2015 and 2016.

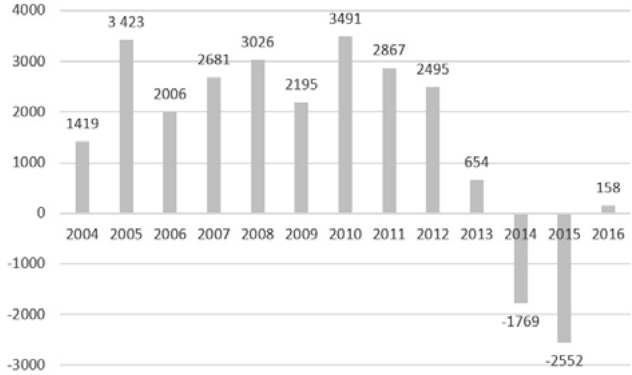
Figure 1 **Growth in organic farmland in Poland between 2004 and 2016 (compared to the previous year, in ha)**



Source: Author's own calculation based General Agricultural and Food Quality Inspection (2005). Organic farming in Poland in 2004. Warsaw; General Agricultural and Food Quality Inspection (2017). Report on the condition of Polish organic agriculture in 2015-2016. Warsaw.

The number of organic farms followed a similar evolution, growing from 3,760 in 2004 to 22,435 in 2016 (an increase by 496.7%) (Figure 2). The largest number of organic farms (26,598) was reported in 2013. In 2014 and 2015, that number declined to 24,829 and 22,277, respectively.

Figure 2 **Growth in number of organic farms in Poland between 2004 and 2016 (compared to the previous year)**



Source: Author's own calculation based on General Agricultural and Food Quality Inspection (2005). Organic farming in Poland in 2004. Warsaw; General Agricultural and Food Quality Inspection (2017). Report on the condition of Polish organic agriculture in 2015-2016. Warsaw.

The dynamic growth of organic farming, recorded since 2004, is strictly related to Poland's accession to the European Union (Łuczka, 2016). The accession was fundamental for the development of organic farming for three essential reasons. First of all, it contributed to aligning the Polish legislation applicable to organic farming and its products with the European Union's legal regulations. The day Poland joined the EU marked the adoption of the organic farming act aligning the national legal system with Union standards (Organic Farming Act of April 20, 2004). Currently, the legal act which prevails over national law is the Council Regulation (EEC) No. 2092/91 of June 24, 1991 governing the conditions for production, processing, inspection system and distribution of organic food. Secondly, it provided the Polish producers with better opportunities of participating in foreign trade in organic products in the Union market. Thirdly, the accession to the European Union contributed to increasing the level of financing for organic agriculture. This helped stimulating its dynamic growth. From 2004, the Polish agricultural sector has been covered by the Common Agricultural Policy and by financial support provided under the 2004-2006, 2007-2013 and 2014-2020 Rural Development Programs. The level of per-hectare payments for organic farming was considerably higher than in the case of other measures. The amount of support for organic farming varies depending on crop type and on whether the farm's conversion process is in progress or complete. During the two-year conversion period, farmers are provided with higher subsidies. In 2004, the per-hectare payment ranged from PLN 188 (EUR 45/

ha) to PLN 260 (EUR 63/ha). Since 2007, the payments have been extended to cover orchards and herbal farms. At the end of the study period, in 2016, the subsidy rates ranged from PLN 428/ha (EUR 103/ha) for permanent grassland (during the conversion period and thereafter) to PLN 1,882/ha (EUR 453/ha) for basic orchards under conversion from conventional to organic.

Table 2 presents the structure of organic farms grouped by area in 2004 and 2016. Both in 2004 and 2016, farms with an area of 10-20 ha had the largest share (around 27%). The smallest share was held by large farms with an area beyond 100 ha (4.6% and 3.6%, respectively). Over the study period, the highest loss of share was reported in the farms with an area of 5 to 10 ha (from 25.6% to 20.4%). In 2016, the average area of organic farms increased was 26.06, which means an increase by 4.6 ha compared to 2004. In 2016, the average area of organic farms was greater than that of conventional farms (10.56 ha) by 15.50 ha, approximately.

Table 2 **Area structure of Polish organic farms in 2004 and 2016.**

Specification	2004		2016	
	Number	Share (%)	Number	Share (%)
Up to 5 ha	699	18.6	4,535	20.3
5-10 ha	962	25.6	4,570	20.4
10-20 ha	1,009	26.8	5,917	26.5
20-50 ha	668	17.8	4,653	20.8
50-100 ha	247	6.6	1,878	8.4
Over 100 ha	175	4.6	816	3.6

Source: General Agricultural and Food Quality Inspection (2005). Organic farming in Poland in 2004. Warsaw; General Agricultural and Food Quality Inspection (2017). Report on the condition of Polish organic agriculture in 2015-2016. Warsaw.

In Poland, organic farms are highly dispersed, and run small-scale production operations which result in interrupted supplies. This situation changed considerably following the accession to the EU. Until 2004, most of the farms were located in regions with a fragmented agrarian structure. Currently, over half of them are located in regions where large-scale farms are predominant.

In Poland, the decision to shift towards organic farming is usually made by farms with lower quality soils of a lower valuation class, located in less-favored areas. These are lower-yield farms which produce smaller quantities of food. A characteristic feature of Polish organic farming is the extensive production model (Jończyk, 2014) with a share of grassland considerably above the general

countrywide level, and with a smaller livestock population (Nachtman, 2012). In 2016, grassland and pasture represented 25.6% of organic farmland while the share of cereals was 18.9%. In the 2004-2016 period, organic farms demonstrated relatively low production volumes of basic products and relatively small livestock populations (Table 3). The respective growth rates were below the agricultural area growth rate. In 2016, production of cereals, fruits and vegetables totaled 147,800 tons, 57,900 tons and 38,100 tons, respectively. Over the study period, the population of dairy cows grew by 52% while that of pigs decreased by 62.9% (in 2016, there was only 11,000 dairy cows and 4,400 pigs for fattening). In turn, as regards poultry farming, there was a considerable growth in the population of broilers (441%) and laying hens (293%).

Table 3 **Production of selected vegetable products and livestock population in organic farms over the 2004-2016 period**

Specification	2004	2016	2004-2016 growth rate (%)
Vegetable production (tons)			
Cereals	25,870.5	147,830.4	571.4
Potatoes	17,234.7	17,902.2	103.9
Fruits	12,505.5	57,941.4	463.3
Vegetables	*	38,120.4	-
Livestock (units)			
Beef cattle	*	8,433	-
Dairy cows	7,788	11,864	152.3
Broilers	6,714	36,337	541.2
Laying hens	45,722	179,764	393.2
Porcine animals	12,004	4,449	37.1
Ovine animals	12,192	19,474	159.7
Caprine animals	1,958	3,519	179.7

*No data
Source: same as in Table 2.

Low vegetable and animal production volumes of organic farms are also confirmed by research on sample farms covered by FADN (Table 4). Accordingly, in 2010, livestock density per hectare of agricultural land was twice lower in larger farms than in smaller ones (0.38 and 0.76, respectively). Low livestock density levels makes it difficult for many farms to keep the balance between farm-produced feed and natural fertilizers. As the agricultural area grows, so do the amounts of aid

for organic farms. Therefore, aid (rather than production activities) is what helps organic farms achieving income levels comparable to those earned by conventional farms. In 2010, the share of aid in incomes of smaller and large farms was 70-80% and 94-102%, respectively (Nachtman, 2012). This shows that organic farming incomes depend upon subsidies (Nachtman, 2009). There is a reason to believe that in many cases, aid is the key motive behind engaging in organic farming. However, in the future, the principles for the allocation of organic farming aid would need to be changed to make it available to farmers who, in addition to complying with environmental objectives, also deliver organic food to the market.

Table 4 **Structure of land utilization and selected economic indicators of organic farms in 2010**

Specification	Farms grouped by area (ha)				
	5-10	10-20	20-30	30-50	>50
Land utilization structure (%)					
Cereals	32.1	33.3	25.6	31.6	32.8
Other crops	11.6	8.0	10.6	9.3	4.3
Orchards	10.8	9.5	2.5	3.5	8.5
Legume crops	41.1	42.9	59.0	51.6	51.4
Livestock density LSU/forage area (ha)	0.76	0.56	0.60	0.46	0.38
Grazing livestock density per hectare of forage area	1.20	0.93	0.72	0.57	0.41
Selected economic indicators					
Vegetable production value per ha of agricultural land	2053	2113	853	1650	624
Direct costs (PLN per ha of agricultural land)	1053	868	593	934	767
Share of subsidies in farming incomes (%)	89.0	73.2	90.4	101.6	93.9

Source: own study based on Nachtman, G. (2012). *Efektywność ekonomiczna gospodarstw ekologicznych w porównaniu do konwencjonalnych w 2010 roku*, Zagadnienia Doradztwa Rolniczego, No. 2, 51-65.

In the study period, the dynamic growth in the number of organic farms and farmland area was not accompanied by a corresponding increase in the marketable production and processing volumes. This was caused by several reasons, including the regulations (applicable until 2014) setting out the principles for organic farming support which was also available to farms without marketable

production. Because organic production was not required to be delivered to the market, agri-environmental programs attracted many farmers interested solely in accessing funds rather than in pursuing agricultural objectives and engaging in marketable production activities. That group, referred to as "subsidy farmers" in the literature, was at the origin of many dysfunctions in the organic farming sector, and contributed to a negative perception of the related support in the context of the purposefulness of public spending. The above had multiple consequences, including the lack of a positive correlation between the growing number of farms and the organic production volume. According to a study among 200 organic farms, commissioned in 2011 by the Ministry of Agriculture and Rural Development, one in three farms did not run any marketable production activities or reported a share of marketable production of up to 20% (results of the 2011 organic farming survey). The average area of farms with high shares of marketable production did not exceed 15.5 ha (compared to 20.7 ha in the case of farms without marketable production). Contributing to high shares of marketable production was the breeding of dairy cows, pigs for fattening and poultry. In turn, a high share of grassland and pastures was characteristic for farms with low shares of marketable production.

Because of low levels of marketable production in organic farming, a new regulation was adopted on March 12, 2014, imposing a requirement to obtain crops from land under organic farming, and a requirement to market at least 50% of the organic farming production volume (Regulation of the Ministry of Agriculture and Rural Development of March 12, 2014). In response to the new requirements, some farmers made a decision to discontinue their participation in the agri-environmental program and to ultimately quit organic farming. This was reflected by the decreasing number of organic farms and by the decline in the area of organic farmland.

The reason for such situation may also be the fact that significant part of the organic farms does not deliver goods on the market, because of the problems of the distribution sphere, which does not ensure efficient flow of goods. Therefore, mainly direct selling and specialist shops dominate in distribution of organic food, which is typical for countries with low level of market development. In Western European countries the organic market has moved from the niche to the mainstream market and the organic distribution concentrates in supermarkets, which allows to apply lower prices for organic food and improves its accessibility (Smoluk-Sikorska, 2017).

Another weakness of organic food economy is not only the low supply of organic raw materials but also the insufficient level of processing. While the processing volumes follow a steady upward trend, processing facilities are dispersed

and misadjusted to the growing demand for organic food. Low levels of processing operations adversely affect production profitability because they are one of the reasons why some of the raw materials from organic farms are sold as conventional products, which contradicts the objectives of organic farming. Note also that only some of the 546 certified processing facilities reported production activities in 2016. The condition of the processing sector is reflected by the fact that in 2016, the volume of processed vegetables and fruits was 3.8 million tons; the respective figures for meat and fish, milk and cheese, and cereal milling were 154,000 tons, 149,000 kg and 9,000 tons. These are very small quantities, all the more so since vegetables, fruits and cereals are the most highly demanded categories of organic food.

In Poland, low processing volumes result from a high dispersion of organic farms. Polish organic processing plants fail to fully exploit their production capacity because of the restricted ability to purchase local organic raw materials. According to studies conducted in a group of 75 processing plants active in conventional and organic processing in parallel, the share of organic processing in the production volume was 10% in every second plant (Łuczka, 2016). Insufficient quantities of raw materials were cited as the reason for the low supply of processing services by 70% of producers surveyed. One of the ways to improve the operation of the resource base, considering the important distances between organic farms, is the horizontal integration of agricultural producers, including as producer groups. The lack of integration with other links of food economy does not only weaken the market position of farmers but also hampers the operation of the supply and sale side of the organic food market (Pawlewicz, 2014, Pawlewicz and Szamrowski, 2012). However, organic farmers show little interest in creating producer groups. In 2016, only 7 of them existed. The lack of interest from the producers in enhanced forms of cooperation suggests there is an urgent need for relevant education measures to be taken by agricultural consultancy centers.

4 Conclusion

Based on the above analysis, several conclusions may be drawn concerning the production and processing sectors of Polish organic farming after the accession to the European Union.

1. In the period of Poland's accession the European Union the dynamic growth of the organic farms (by 497%) and organic utilized agricultural area (by 549%) took place.

2. The high dynamics of organic farming growth was not accompanied by a corresponding increase in production volumes of organic food. This resulted from

the financial support system, which was not related to the production amount of farms. As a consequence, the market supply was insufficient.

3. The insufficient supply of organic food in Poland reveals the immaturity of the organic food market. Measures need to be taken on the production side to stimulate the growth of supply and further the farmers' interest in selling their output in the market.

4. The poor development of organic production and processing in Poland is the reason why the relevant research needs to be continued and intensified in order to identify the development barriers and specify the degree and nature of relationships with the organic food market. The existing studies on these matters fail to provide a basis for a more in-depth analysis of reasons behind the insufficient supply of organic food despite the increasing demand vacuum.

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