

## THE ANALYSIS OF EUROPEAN ORGANIC FARMING PRODUCTION IN 2010–2017

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### ABSTRACT

The world sees one of the many agricultural production opportunities in organic farming. There are many challenges facing ecological producers, which on the one hand affect the income sphere of farmers, because they concern the provision of a fair existence, and on the other, farmers and organic producers must respect legal regulations and meet growing social expectations in the field of environmental protection and biodiversity. The aim of this article was to analyse data on organic farming production in Europe. Presented in it the number of organic European agricultural producers, the biggest producers, the number of organic crop area in Europe and the countries with the largest agricultural area in Europe. The article focuses on plant and animal organic production. Animal production divided into organic production of livestock of animals and organic production of animal products (excluding eggs).

**Key words:** organic farming, organic food, agricultural production

**JEL codes:** E230, Q100

### INTRODUCTION

Both in the world and in Poland there is intensive and systematic development of organic farming. The demand for organic food is also growing. Organic food is obtained from plant or animal products produced on organic farms. There are no artificial fertilizers, pesticides or food additives used on these farms.

Organic production gives the opportunity to receive high-quality, natural and safe products. Organic farms not only produce high quality food, but also care about the quality of the entire environment in which it operate. The global organic food market is facing a great opportunity for development. Together with the increase of ecological awareness and the

level of affluence of societies, interest in this type of products is increasing.

Organic farming is the most pro-environmental agricultural production method, it is a very important area, but it requires constant changes to increase the share of this production sector. It can be clearly emphasized that organic farming is becoming a global trend. Ecological awareness of society is constantly increasing, which is clearly visible by the growing demand for organic products.

The dual nature of the organic farming system is very often emphasized. It is primarily a system that has a positive impact on the natural environment, which in turn contributes to the broadly understood agro-environmental benefits. On the other hand, or-

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organic farming is a response to the changing structure of market demand. After the great fascination of the world in the production of food in industrial conditions – the consumer is increasingly of the opinion that only food was created in conditions as close as possible to natural meets his expectations.

## **THEORETICAL BACKGROUND**

Organic farming is a branch of the national economy characterized by a full fit to the rhythm of nature's life. Its essence is to stimulate natural processes occurring in ecosystems by using ecological resources of production. These treatments ensure further soil productivity and guarantee the health safety of all products, both of plant and animal origin (Nestorowicz and Pilarczyk, 2010).

Organic farming is therefore a system of sustainable management (not technologically processed) of plant and animal production, based on biological and mineral origin. The organic production process rejects the use of strong antibiotics, hormones, preservatives and other unnatural additives and fertilizers (Domagalska and Buczkowska, 2015).

Organic farming is very important in the concept of sustainable development. This strategy should achieve social, economic and environmental goals. It combines activities that should satisfy the basic needs of society, improve the quality of life and provide the right amount of goods and services with activities aimed at improving the condition of the natural environment (Kahl et al., 2010).

Organic farming is one of the fastest developing branches of agriculture in the world, and in particular in the European Union. The basis for organic production, both plant and animal, should be the preservation of the highest degree of biodiversity, animal welfare and the use of only natural production methods (Barłowska and Wolanciuk, 2017).

The development of organic farming, which is also called biological, has been largely influenced by conventional farming, whose impact on the environment was negative. It was, among others, pollution of surface and groundwater with nitrogen compounds and overproduction of food in highly developed countries. In organic farming, GMOs, synthetic fertilizers,

pesticides, growth regulators and artificial feed additives are not used (Kowalska, 2015).

Production should be based on properly planned crop rotation, in order to preserve or improve soil fertility, and appropriate selection of plant species and varieties as well as animal species and breeds that show natural disease resistance and high adaptability to local environmental conditions. Compliance with these principles allows achieving two most important goals, i.e. environmental protection within the soil, water and landscape, and high quality of agricultural produce (Rigby and Cáceres, 2001).

Products from organic farming are called organic or biological food. These are unprocessed crops originating from organic farming, as well as products made from them. We also include products and various products of animal origin produced in an organic farm (Miśniakiewicz and Suwała, 2006).

The transition from conventional to organic farming can be cost-effective, although the yields are lower, and the time of animal husbandry is doubled. Production on the farm with an organic certificate it is more profitable for farmers because the prices of manufactured products are higher compared to those from conventional farms. Organic farming requires much more work than conventional. In such farms there are more jobs, which may translate into a reduction in emigration of people from the countryside. It is also beneficial that organic farms are characterized by lower energy consumption (Kiełbasa, 2015).

## **MATERIALS AND METHODS**

The article uses the method of data analysis. Statistics from the Eurostat database were used as well. The research period is between the years 2010–2017 and concerns organic farming production in Europe. The data used in the article contain utilised agricultural area excluding kitchen gardens, total fully converted and under conversion to organic farming.

## **RESULTS AND DISCUSSION**

The greatest dynamics of the development of organic farming in the EU member states were recorded in the 1990s (Szarek and Nowogródzka, 2015). However,

its importance in the total production of food was and still is secondary. A very fast increase in the area of organic farming and the number of agricultural producers was visible only after 1999, when appropriate legal regulations concerning agriculture and organic food were introduced, as well as aid in the form of subsidies for farmers involved in such production. Also in Poland, after joining the European Union, the number of organic farms and the area of agricultural land managed in the ecological system increased significantly, similarly to earlier in other member states (Nachtman, 2015).

For the last 10 years, the organic food market has been thriving, which has intensified demand. The global market for such food has increased fourfold since 1999. Areas for organic farming in the EU have doubled. Every year, 500,000 ha are transformed into organic farming (Domagalska and Buczkowska, 2015).

The number of organic European agricultural producers was growing from year to year. In 2012 there were 319,789, while in 2017 this number increased to 389,813 (Fig. 1). This is an increase of 21.9%.

The most producers are in Turkey. In 2017 there were 75,067. A lot of organic agricultural producers are also in Italy (66,788), Spain (37,712), France (36,691) and Germany (29,764). The countries with the least number of producers are Malta (13), Iceland (30), Luxembourg (103), Serbia (286) and Montenegro (308). In Poland in 2017 were register 20 257 such producers. This number is steadily growing. It gives our country a 8<sup>th</sup> place.

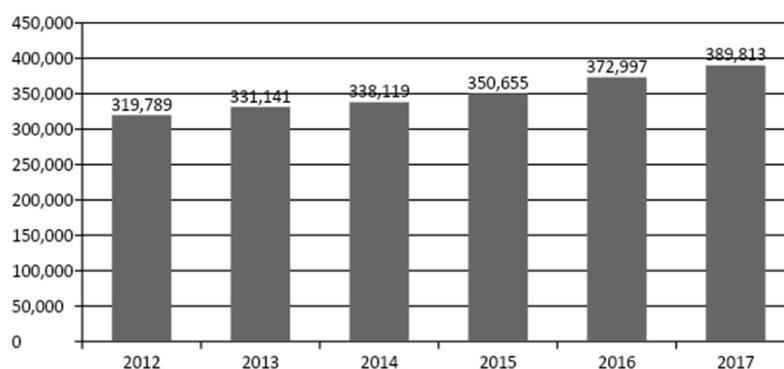
The Polish market for organic food is developing dynamically, but we still have to chase countries such as the Germany, France, the United Kingdom, the Netherlands and Austria. According to trade forecasts, the upward trend on the Polish market is expected to continue at least until 2030.

The result of an increasing number of organic agricultural producers is more and more organic crop area in Europe. The number of organic crop area in Europe is growing from year to year. In 2012 there were 10,224,170 ha, while in 2017 this value increased to 13,351,911 (Fig. 2). This is an increase of 30.6%.

The countries with the largest agricultural area in Europe are Spain with 2,082,173 ha, Italy (1,908,570), France (1,744,420) and Germany (1,138,272). In turn, the countries with the smallest agricultural area in Europe are Malta (41), Montenegro (2,797), North Macedonia (3,193), Luxembourg (5,444) and Cyprus (5,616). Poland is in 10<sup>th</sup> place with 494,978 ha. It is worth noting that Liechtenstein is the country with the highest percentage of ecological areas in Europe (31.0%).

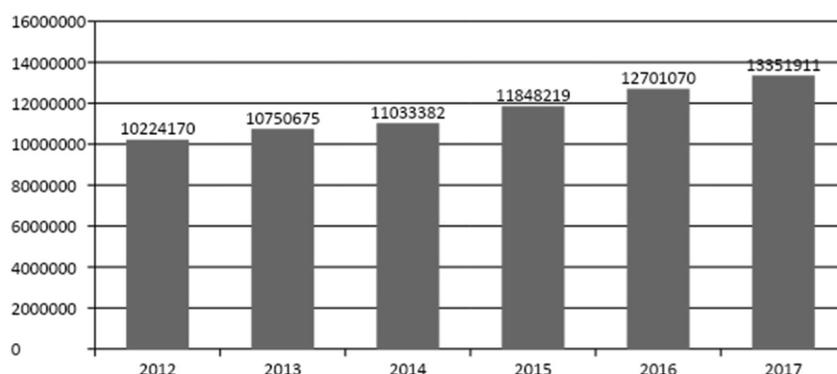
However, the Danish market is considered the best developed market for organic food in EU countries. The Danes allocate the largest amount of money for organic products per capita in comparison to other EU countries.

In 2017 were produced in Europe 12,602,383 t of organic crops. These were mainly plants harvested green from arable land (4,309,885 t), cereals for the production of grain (including seed)



**Figure 1.** Number of organic European agricultural producers

Source: the author's own compilation on the basis of Eurostat database, [www.ec.europa.eu](http://www.ec.europa.eu) [Access 28.04.2019].



**Figure 2.** Organic crop area in Europe (ha)

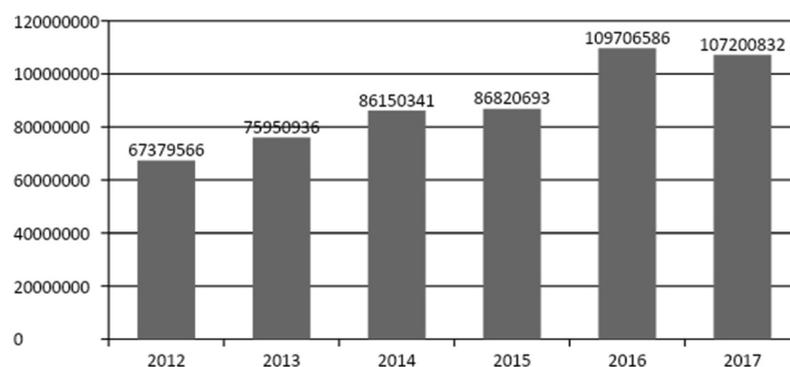
Source: the author's own compilation on the basis of Eurostat database, [www.ec.europa.eu](http://www.ec.europa.eu) [Access 28.04.2019].

(1,848,667 t), cereals (excluding rice) for the production of grain (including seed) (1,825,896 t), fresh vegetables (including melons) (1,109,409 t), wheat and spelt (617,166 t), oats and spring cereal mixtures (mixed grain other than maslin) (508,677 t), grapes (392,227 t), olives (356,524 t), barley (303,436 t), root crops (281,196 t), industrial crops (225,863 t), rye and winter cereal mixtures (maslin) (108,422 t).

Animals are also a very important part of European organic production and an organic farm. The number of animals in an organic animal farm should depend on the possibility of fodder and fertilizer balance on the farm. It is recommended that animals kept on an organic farm come from other organic farms. In 2017 were produced in Europe 107,200,832 organic livestock of animals. It was less than in the previous year, but almost 60% more than in 2012 (Fig. 3).

The largest producers of horses in 2017 in Europe were Austria (17,273), Switzerland (9,614), the Czech Republic (8,741) and Spain (6,187). In Poland in 2017 were bred 604 horses. It gives our country a 11<sup>th</sup> place. The largest bovine animals producers in 2017 in Europe were Germany (1,577,122), France (1,299,712), Austria (844,016) and Sweden (614,240). Poland is in 23<sup>rd</sup> place with 55,802 bovine animals from organic breeding. In the pig production process by organic methods, the largest producers in 2017 in Europe were Denmark (749,926), France (564,572), Germany (193,338) and Netherlands (175,084). In Poland in the same period were bred 7,786 organic pigs. It gives our country a 15<sup>th</sup> place.

The European organic production of animal products (excluding eggs) is growing from year to year. In 2012 it was 3,977,399 t product weight, while in 2017



**Figure 3.** Number of organic production of livestock of animals

Source: the author's own compilation on the basis of Eurostat database, [www.ec.europa.eu](http://www.ec.europa.eu) [Access 28.04.2019].

this number increased to 6,749,507 (Fig. 4). This is an increase almost of 70%. The largest producers of organic production of animal products (excluding eggs) in 2017 in Europe were Germany with 1,355,977 t product weight, France (1,150,074), the United Kingdom (825,200) and Austria (792,803). In Poland in 2017 were produce 26,734 t product weight. It gives our country a 18<sup>th</sup> place.

Research indicates significant differences between meat from organic and conventional production. Organic meat products have a higher content of nutrients. The largest producers of meat of livestock in 2017 in Europe were France with 55,694 t product weight, the United Kingdom (53,000), Sweden (26,877) and Spain (26,417). Poland is almost at the end of this classification with only 2 t product weight. In Poland, there was no organic production of bovine meat, pig meat, poultry meat, goat meat, and sheep meat.

The largest number of organic dairy products is produced by Germany (1,355,977), France (1,094,380), Austria (792,803) and the United Kingdom (772,200). Poland in 2017 was produce 26,734 t of organic dairy products. It gives our country a 17<sup>th</sup> place.

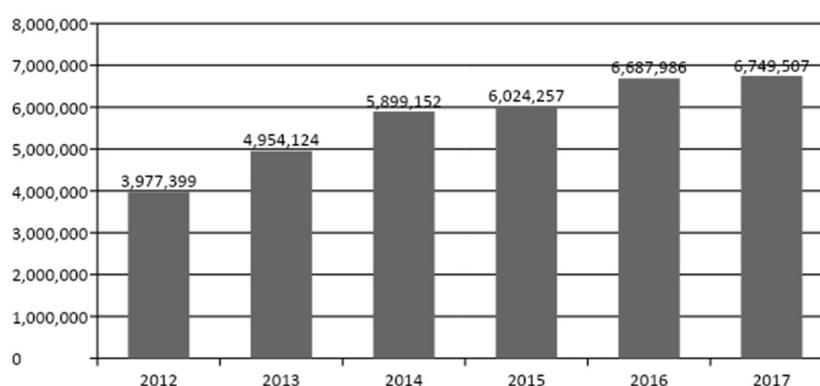
The United Kingdom is one of the countries that imports most of the products on its organic food market from other countries. This percentage is high and amounts to almost 70%. This is due to the inadequate structure of supply. The most important sales channel for eco-food in the United Kingdom are large-format stores.

In organic eggs production first in 2017 in Europe was France with 1,383,000,000 eggs. Next were Germany (1,293,806,000), the Netherlands (882,995,575) and Sweden (380,119,347). In Poland were produce 20,264,110 eggs (14<sup>th</sup> place).

In an unusual situation among the EU countries is the Netherlands, which despite the small area of organic farming is in Europe also an influential exporter of such eco-products as: vegetables, fruits, cheese, cereals, spices, herbs. The Netherlands as one of the few countries doing research supply and demand on the market of organic food. The persistently implemented policy of support for organic farming means that the demand for eco-food is constantly growing in the Netherlands (Tyburski and Żakowska-Biemans, 2007).

A smaller part of organic agricultural production is organic production of aquaculture products. The largest producers of aquatic organisms in 2017 were Ireland with 42,711 t, following by Norway (13,611), Italy (8,782) and Spain (4,393). Organic production of aquaculture products in Poland was at the level of 17 t.

Importing of organic products is a popular practice. There are 4,610 importers in the EU, where a significant part of them concerns EU founding countries, highly developed countries and those with large, well-stocked supermarkets. Among them we distinguish: Germany (1,687), France (418), Italy (411), the Netherlands (385), Spain (263). Poland has 161 importers of eco-products.



**Figure 4.** Organic production of animal products excluding eggs (t product weight )

Source: the author's own compilation on the basis of Eurostat database, [www.ec.europa.eu](http://www.ec.europa.eu) [Access 28.04.2019].

## CONCLUSIONS

Over the last 10 years the market for organic food was characterized by buoyant growth. The number of organic European agricultural producers was growing from year to year. The most producers are in Turkey. A lot of organic agricultural producers are also in Italy, Spain, France and Germany. Poland is in 8<sup>th</sup> place.

The result of an increasing number of organic agricultural producers is more and more organic crop area in Europe. The number of organic crop area in Europe is also growing from year to year. In 2012 there were 10,224,170 ha, while in 2017 this value increased to 13,351,911. This is an increase of 30.6%. The countries with the largest agricultural area in Europe are Spain, Italy, France and Germany. Poland is in 10<sup>th</sup> place. The European organic production of organic crops, livestock of animals and animal products is getting bigger.

A smaller part of organic agricultural production is organic production of aquaculture products. The largest producers of aquatic organisms in 2017 were Ireland, following by Norway, Italy and Spain.

The Polish market for organic food is developing dynamically, but we still have to chase countries such as the Germany, France, the United Kingdom, the Netherlands and Austria.

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