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DEVELOPMENT OF ORGANIC PRODUCTION AND ORGANIC FOOD MARKET IN EUROPE

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Abstract. The article aims to present the size and pace of development of organic production and organic food market in Europe. The biggest areas of agricultural land utilized for organic farming are in the countries, where the organic food market is the biggest, i.e. in the richest countries of Western Europe. However, meeting the demand for organic food based on those countries' own production is not possible and must be supported by import i.a. from Poland. Therefore, organic production in Poland is developing quickly, which is also a great opportunity to develop for many farms, especially the smaller ones, and to utilise a surplus of labour force that exist in Polish agriculture.

Key words: organic farming, organic production, organic food market

INTRODUCTION

The interest in the growth of organic farming started in the highly developed countries as a result of social awareness about the negative side effects of the highly intensive agricultural production, including the high level of input into industrial means of production (fertilizers and pesticides). The motive power for the development of agriculture that was created in the second half of the 20th century aimed to increase production and forced the use of modern technologies with a big share of means of production, that decreased physical and chemical quality of soil [Woś 2004]. Hence the need to limit their use, as well as to take measures improve soil fertility. Moreover, this mechanism resulted in the increase in production that exceeds demand and in the decrease in the quality of food products and raw materials [Łuczka-Bakuła 2007]. Hence the interest in high-quality food, including organic food.

Organic farming responds to the food market demand, increases the fertility of soil and protects natural environment. The essence of organic farming is adequate crop rotation and natural fertilizing [Tyburski, Żakowska-Biemans 2007], which improves

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physical and chemical features of soil and increases its humus content and thus is favourable for the use on low quality soil. Organic methods of agricultural production also serve the maintenance of clean water and soil as well as protect and enrich the diversity of plant and animal life in natural environment [Runowski 2012]. Thus, they contribute to the improvement of the state and conservation of natural environment.

MATERIAL AND METHODS

The aim of the article is to present the size and pace of growth of organic production and organic food market in Europe based on available statistics with regard to organic farming and organic food market. Source of data for analyses were primarily yearbooks titled The World of Organic Agriculture – Statistics and Emerging Trends, which are published by the Research Institute of Organic Agriculture (FiBL) in Frick (Switzerland) and International Federation of Organic Agriculture Movements (IFOAM) in Bonn (Germany). Data on the area of organic crops in the world were collected for the first time in 2004, therefore, the analyses presented in the article cover the years 2004–2012.

DEVELOPMENT OF ORGANIC PRODUCTION

Organic farming develops in most countries on all continents. Especially big interest in the development of agricultural production obtained with the use of ecological methods can be observed in the European countries. In 2012, the acreage of agricultural land cultivated with the use of ecological methods in Europe was estimated to be 11.2 million ha while in the early 1990s it was only 0.5 million ha. In 2012 in the European Union countries, the area was estimated to cover 10 million ha. In the period 2004–2012, especially big (almost threefold) increase in the organic farming acreage was registered in the countries that joined the EU after 2004 (EU-N12). The biggest increase took place in Poland (eightfold). Despite a considerable increase of the acreage in the countries of the EU-N12, most of it (almost 80%) is in the countries of the old fifteen (EU-15). This is the result of both the high demand for organic products in the EU-15 countries, as well as the long-lasting support from many years the development of organic agriculture in these countries (Table 1).

Table 1. Acreage of agricultural land utilised with the use of ecological methods in Europe in 2004–2012

Region	Area of agricultural land (million ha)								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Europe	6.5	6.8	7.4	7.8	8.2	9.3	10.0	10.6	11.2
EU-27	6.0	6.5	6.9	7.3	7.8	8.5	9.2	9.6	10.0
EU-15	5.3	5.5	5.7	5.9	6.3	6.9	7.1	7.3	7.6
EU-N12	0.8	1.0	1.1	1.3	1.5	1.6	1.9	2.1	2.3

Source: Author's own development based on The World of Organic Agriculture… 2006–2014 [2014].

The biggest areas of agricultural land utilised with the use of ecological methods are in Spain (1.6 million ha), Italy (1.2 million ha), Germany (1.0 million ha), France (1.0 million ha) and Poland (0.66 million ha). The share of organic farming area in the total agricultural area, i.e. ecological management of land resources in agriculture in the EU countries in 2012 amounted to 5.6%, while generally in Europe – 2.3%. The largest was in Austria (19.7%), Sweden (15.6%), Estonia (15.3%) and Switzerland (12.0%). In Poland it was at the level of 4.3%.

The acreage of the agricultural land cultivated with the use of ecological methods used for arable crops in Europe in 2012 was 4.7 million ha (42%), for permanent crops 1.1 million ha (10%) and for permanent grassland 4.9 million ha (44%) – Figure 1.

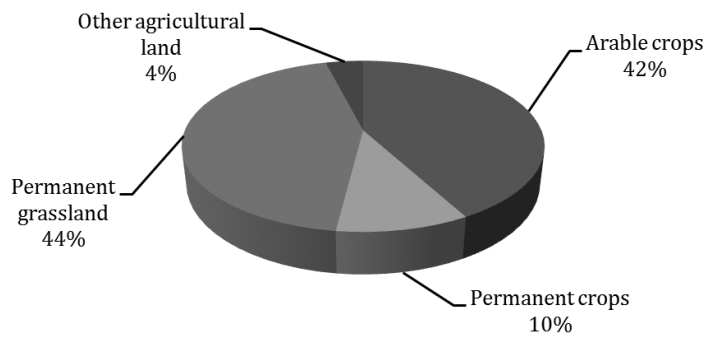

Fig. 1. Structure of agricultural land use for organic farming in Europe in 2012
Source: Author's own development based on The World of Organic Agriculture… [2014].

In 2012, in comparison to 2004 the acreage of organic arable crops in Europe more than doubled (increased by 114%), of permanent crops increased by 120% and of permanent grassland by 58% (Table 2). Thus, the area of organic arable crops and permanent crops cultivation is increasing faster than the area of permanent grassland.

Table 2. Acreage of agricultural land utilised for organic farming in Europe in 2004–2012

Type of plant cultivation	Area of agricultural land (million ha)								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Arable crops	2.2	2.7	2,9	3.2	3.3	3.7	4.1	4.4	4.7
Permanent crops	0.5	0.5	0,7	0.7	0.8	1.0	1.0	1.1	1.1
Permanent grassland	3.1	3.0	3,3	3.3	3.9	4.1	4.5	4.5	4.9

Source: as in Table 1.

The area of organic arable crops includes the cultivation of cereals, vegetables, protein crops, oilseeds, potatoes, sugar beet and fodder plants. Moreover, the cultivation of strawberries is included in the group. The acreage of organic arable crops in Europe constitutes a major part of the total acreage of organic arable crops in the world (in 2012 it was over 60%). Organic cultivation of cereals in Europe in 2012 was on the area of 1.9 million ha and it was 40% of all the organic arable crops in the region (Fig. 2) and over 70% of the organic cereals cultivation area in the world (2.65 million ha).

The biggest areas of organic cereals farming are in Italy (0.21 million ha), Germany (0.20 million ha), Spain (0.17 million ha), France (0.13 million ha), Ukraine (0.13 million ha) and Poland (0.12 million ha). Wheat holds a dominating position among all the types of cereals (over 40% of organic cereals farming both in Europe and in the world).

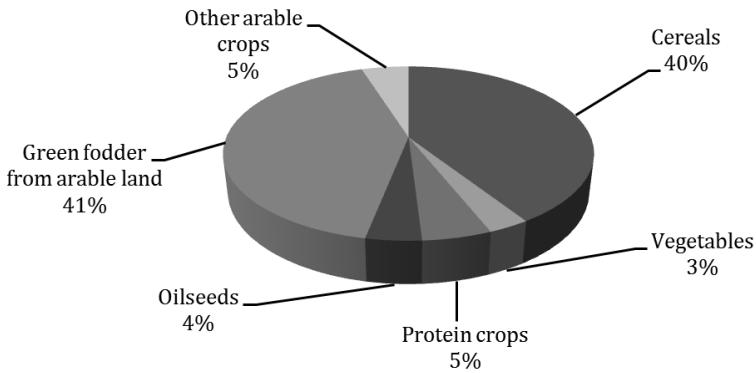

Fig. 2. Structure of organic arable crops cultivation area in Europe in 2012
Source: as in Figure 1.

Organic vegetables cultivation in 2012 covered the area of 0.12 million ha and constituted almost 3% area of organic arable crops in Europe and a half of the organic vegetable cultivation in the world (0.24 million ha). The biggest areas of organic vegetables farming are in Italy (21,000 ha), France (14,000 ha), Germany (11,000 ha), Great Britain (11,000 ha), Spain (10,000 ha) and Poland (9,400 ha). Organic cultivation of protein crops in the same period covered the area of 0.24 million ha and constituted over 5% of the organic arable crops cultivation area in the region and almost 80% of organic protein crops in the world. The biggest areas of organic protein crops cultivation are in France, Spain, Germany, Italy and Austria. The cultivation of oilseeds with the use of organic methods in 2012 covered the area of 0.19 million ha (4% of the arable crops cultivation area in Europe and 30% of the oilseeds cultivation area in the world). The biggest areas of organic oilseeds cultivation are in Romania, Ukraine and France.

The area of organic permanent crops in Europe includes plantations of fruit trees and shrubs for fruit production in the temperate zone (apple, pear, plum, sweet cherry, cherry, peach, raspberry and currant), olive groves and plantations of grapes, nuts, citrus fruit and medicinal plants. Organic plantations of fruit trees and shrubs for fruit production in the temperate zone are located mainly in Europe and in 2012 their area covered 120,000 ha, i.e. 11% of the permanent crops in the region (Fig. 3) and almost 80% of organic plantations of fruit trees and shrubs for fruit production in the temperate zone in the world (157,000 ha).

Poland is the country with the biggest plantations area of fruit trees and shrubs for fruit production in the temperate zone both in Europe and in the world (Fig. 4). The area of organic fruit trees and shrubs plantations in Poland in 2012 was estimated to cover 42,000 ha and constituted 35% of organic fruit trees and shrubs plantations in Europe and 27% of organic fruit trees and shrubs plantations in the world. Within the organic

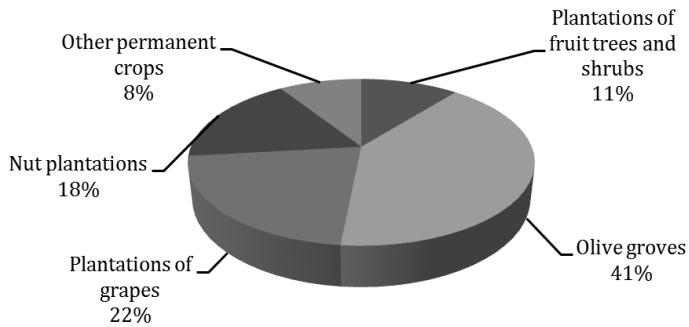

Fig. 3. Structure of organic permanent crops area in Europe in 2012
Source: as in Figure 1.

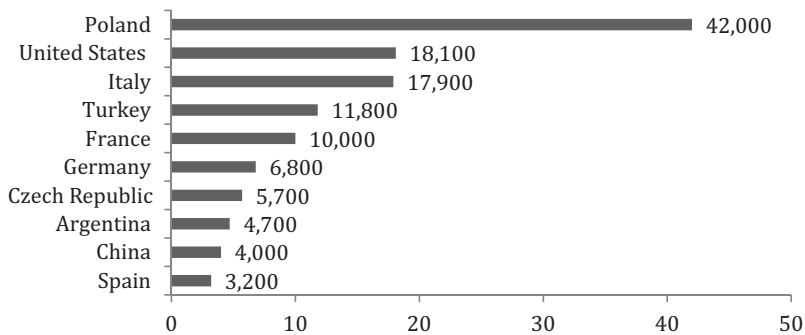

Fig. 4. Countries with the biggest area of organic fruit trees and shrubs plantations for fruit production in the temperate zone in the world in 2012 (thousand ha)
Source: as in Figure 1.

plantations of fruit trees in Poland, apple trees plantations dominate but there are also plantations of pears, plums, sweet cherries and cherries. The area of organic apple trees plantations in 2012 constituted 44% of the organic apple trees plantations acreage in the world. In Poland, there are also the biggest areas of organic plantations of fruit shrubs, especially raspberries and black currants.

The research shows that organic cultivation of fruit and vegetables in Poland are mainly located in small and medium size farms [Komorowska 2012]. It creates conditions for better use of labour resources and prospect of the development of these farms because fruit and vegetables occupy an important position among the best-selling products on organic food market. It must be emphasised here that almost half of organic farms in Poland cover the area of up to 10 ha of agricultural land and 70% of organic farms in our country cover the area of up to 20 ha of agricultural land [Raport o stanie… 2013]. Thus, we have a big number of small and medium size organic farms that are involved in laborious cultivation of fruit and vegetables as well as potatoes for consumption. That is why the size of production of these products in our country is large. A big part of these products is exported. A comparative analysis of the average organic farm set on arable crops in Poland and Germany shows that the share of fruit and vegetables in the value of

production obtained in this type of farm in Poland is almost 50%, whereas in Germany it is less than 18% [Nachtman 2008]. However, the average organic farm focused on arable crops in Poland is much smaller than in Germany, which results in difficulties in the organisation of the sale of products produced on a small scale.

The biggest share in the area of permanent crops in Europe belongs to organic olive groves. In 2012, they covered 456,000 ha and constituted 40% of permanent crops area in the region (Fig. 3) and almost 80% of organic olive groves in the world (576,000 ha). The biggest areas of organic olive groves both in Europe and in the world are in Spain (168,000 ha in 2012) and in Italy (165,000 ha). In 2012, the area of organic olive groves in Spain covered 37% of organic olive groves area in Europe and almost 30% of organic olive groves area in the world, while in Italy, respectively 36 and 29%. Considerable areas of organic olive groves are also in Greece (63,000 ha) and in Portugal (17,000 ha).

Organic grapes plantations are mainly located in Europe. In 2012, organic cultivation of grapes in Europe was on the area of 241,000 ha and constituted almost 22% of the acreage of all permanent crops in the region (Fig. 3) and 83% of the organic grapes plantation area in the world (284,000 ha). The biggest areas of organic grapes plantations both in Europe and in the world are in Spain (81,000 ha), France (65,000 ha) and Italy (57,000 ha). In 2012, the area of organic grapes plantations in Spain constituted 34% of organic grapes plantations in Europe and almost 30% of organic grapes plantations in the world, in France 27 and 23% respectively and in Italy 24 and 20% respectively. There are also considerable areas of organic grapes plantations in Germany (7,400 ha) and Greece (5,000 ha).

It must be emphasised that in Europe, there are also big areas of organic nut plantations (first of all in Spain and Italy) and organic citrus fruit plantations (especially in Italy, Spain and Greece). The biggest areas of organic strawberry plantations are in Spain, Poland, Germany and Italy.

Statistics regarding livestock population on organic farms are incomplete, however, the data published by Eurostat show that in the EU countries, organic husbandry of cattle, sheep and goats is of a considerable size. In 2011, organic farms of the EU countries had 2.6 million head of cattle, i.e. 2.9% of all cattle in these countries, including 0.7 million head of dairy cattle, i.e. 3.0% of dairy cattle in the EU countries (Table 3). The number of head of cattle on organic farms is rising with the growth of the area of agricultural land cultivated with the use of organic methods and the increase in the demand for products of cattle, especially milk and milk products. The biggest organic cattle breeding share in the whole cattle population belongs to Austria (19%), Sweden (17%), Latvia and the Czech Republic (13%) and Denmark (10%). The biggest share of organic dairy cattle in the whole dairy cattle population belongs to Austria (18%), Sweden (12.7%), Denmark (10.9%) and Great Britain (8.1%).

In 2011, on organic farms in the European Union countries, it was estimated that there were 4 million head of sheep and 0.5 million head of goats, i.e. 2.8% of all sheep and goats in these countries. Organic husbandry of sheep is found mainly in Great Britain (1.2 million head), Italy (0.7 million head) and Spain (0.6 million head), and also in France (0.3 million head) and Greece (0.2 million head). In Great Britain organic sheep are raised mainly for meat, in Italy and Greece for milk and dairy produce, mainly cheese, including Feta in Greece. Organic goat farming is located mainly in Greece (0.2 million

Table 3. Livestock population on organic farms in the European Union countries in 2011

EU countries	Livestock population (million head)						
	cattle	of which dairy cows	pigs	sheep	goats	poultry	of which laying hens
EU-27	2.6	0.7	0.9	4.0	0.5	26.2	12,7
EU-15	2.2	0.65	0.8	3.6	0.46	25.7	12.4
EU-N12	0.4	0.06	0.1	0.4	0.04	0.5	0.3

Source: Facts and figures on organic agriculture… [2013].

head) and its main production is milk to make Feta. In most European Union countries, goats are raised for milk to make goat cheese.

Organic pig farming does not play so important role in agriculture as cattle, sheep and goat husbandry. The pig population on organic farms in the European Union countries in 2011 was 0.9 million head and it was only 0.33% of the whole pig population in these countries. The biggest organic pig farming is found in Germany (0.2 million head), Denmark (0.2 million head) and France (0.2 million head).

The population of poultry on organic farms in the EU countries in the discussed year was 26.2 million head (only 1% of the whole poultry population in these countries), of which almost half were laying hens because of big demand for organic eggs. Organic poultry farming is found mainly in France, where in 2011 were 10.9 million head of poultry, of which one third were laying hens.

DEVELOPMENT OF ORGANIC FOOD MARKET

Organic food market is developing in many countries in the world but mainly in rich countries because organic food prices are in general much higher than those for conventional products [Łuczka-Bakuła 2007, Runowski 2012]. Although the share of organic food market in the whole food market is small, it is continually growing year by year. The European organic food market is found mainly in Western European countries and is systematically developing. In 2012, it was estimated to be worth EUR 22.8 billion, including the EU market – EUR 20.9 billion. In comparison with 2004, its turnover doubled (Table 4). Especially fast development of organic food market is observed in Germany, France, Switzerland and the Netherlands.

The country with the biggest internal organic food market in Europe is Germany, where in 2012 it was estimated to be worth EUR 7 billion, i.e. almost one third of the

Table 4. Development of organic food market in Europe in 2004–2012

Region	Organic food market (billion EUR)								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Europe	10.8	12.1	13.5	15.2	17.1	18.2	19.7	21.5	22.8
EU	10.0	11.2	12.6	14.3	15.9	17.0	18.2	19.7	20.9

Source: as in Table 1.

European organic food market turnover (31%). The second biggest organic food market in the region is France with the 2012 turnover of EUR 4 billion, i.e. 18% of the European organic food turnover, and the third biggest one is Great Britain, which was estimated to be worth EUR 2 billion, i.e. 8% (Fig. 5). Other countries with a considerable organic food market in Europe are Italy, Switzerland, Austria, Spain, Sweden, Denmark and the Netherlands. Poland's organic food market is estimated at EUR 120 million.

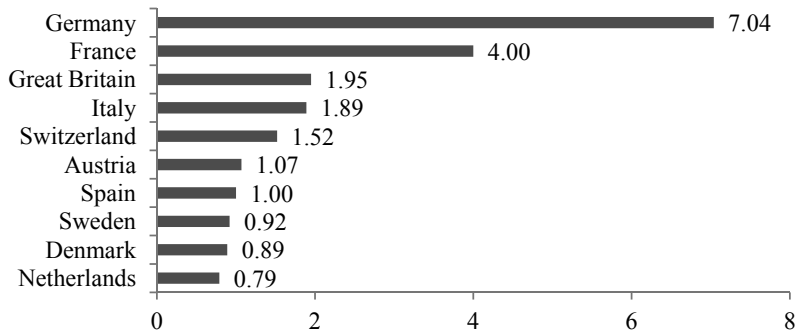

Fig. 5. Countries with the biggest internal organic food market in Europe in 2012 (billion EUR)
Source: as in Figure 1.

The most popular products of the organic food market are fresh produce, especially fruit and vegetables that have an absolutely bigger share in the organic food market than in the conventional one. Fruit and vegetables are the pioneering organic products in Europe. Their share in the organic food market, depending on the country, stands at between 20 to over 30%. Fruit and vegetables have a big share in the organic food market in Italy, Ireland, Norway, Sweden and Germany [Willer et al. 2013].

With the development of organic animal husbandry and animal production, the share of animal products, especially milk and milk products, in the organic food market is growing. In 2011, the sales value of these products constituted 30% of the organic food turnover (Fig. 6). Milk and milk products are the majority of the organic food products in many countries, especially of Northern Europe. In addition, sales of meat and meat

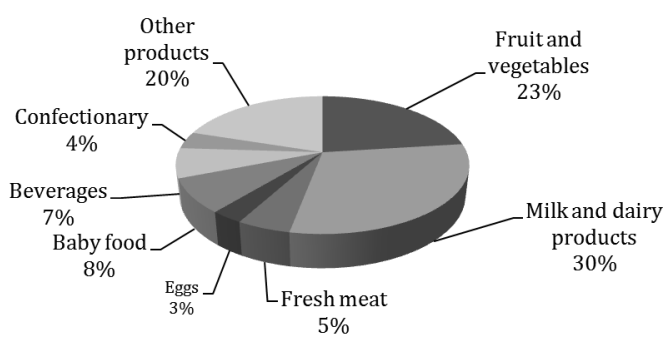

Fig. 6. Structure of organic food market in Europe in 2011
Source: Willer et al. [2013].

products have a considerable share in this market, especially in Belgium, the Netherlands, Finland and France (about 10% of organic food in these countries). Sales of organic eggs make on average 3% of organic products sales.

Cereals and their products, especially those that are easy to store and sell, but also bread, play an important role within the organic food range, especially in such countries as Switzerland, the Netherlands, France, Sweden, Finland and Germany.

The share of organic food market in the whole food market in Europe is rather small because it is less than 3%. The biggest organic food market share in the domestic food market is in such countries as Denmark (7.6% in 2012), Austria (6.5%), Switzerland (6.3%), Sweden (3.9%), Germany (3.7%), Luxembourg (3.1%) and France (2.4%). In Poland it is only 0.2% and that is why a significant portion of domestic production (it is estimated that about 50%) is targeted for export. The reasons for that small share of organic food in the Polish food market are first of all the relatively lower level of the Polish society affluence and the belief and trust in the domestic conventional food, which results from a low level of agrochemicals used in our agriculture. For this reason, Polish conventional food is also appreciated on foreign markets.

In countries with the developed organic food market, the main points of sale are the grocery outlets. Their importance in the distribution of organic food is rising with the increase in the supply for those products [Gulbicka 2007]. The organic food market in Poland is in the initial stage of developing distribution channels and due to that there are two dominating forms of sale: directly from organic farms and in specialist shops [Smoluk-Sikorska, Łuczka-Bakuła 2013]. Although organic food products are now available in many grocery outlets, specialist shops are still important because customers trust organic food sold in them. Forms of selling organic food that consumers like and appreciate are various organic food fairs organised by producers. Their popularity is constantly growing and they are a form of organic products promotion as well as provide knowledge about their production methods.

The biggest spending on organic food per capita in Europe is in the richest Western European countries and Switzerland (Fig. 7), i.e. in the countries where the share of organic food market in the domestic food market is the biggest. In Poland, spending on organic food is small and reaches only EUR 3 per capita annually.

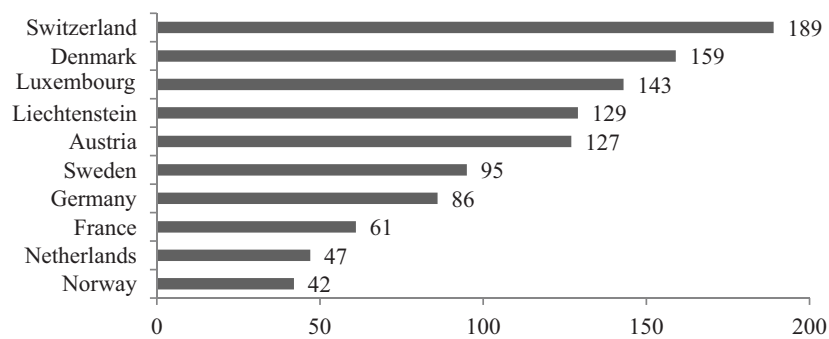

Fig. 7. Countries with the highest spending on organic food consumption in Europe in 2012 (EUR per capita)

Source: as in Figure 1.

CONCLUSIONS

Organic farming is developing in most countries on all continents, but the most dynamic development of organic production is observed in the European countries. It results from the growing demand for organic food and support for organic farming. The biggest areas of agricultural land utilised for organic farming are in the countries, where the organic food market is the biggest, i.e. in the richest countries of Western Europe. Also the spending on organic food per capita in these countries is the biggest. However, meeting the demand based on those countries' own production is not possible and they have to import a considerable amount of organic food, also form Poland. That is why organic food production in Poland is developing very fast, which is an opportunity to develop for many farms, especially the smaller ones, and to utilise the surplus of labour force that exists in our agriculture.

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ROZWÓJ PRODUKCJI EKOLOGICZNEJ I RYNKU ŻYWNOŚCI EKOLOGICZNEJ W EUROPIE

Streszczenie. Celem opracowania jest przedstawienie rozmiarów oraz tempa rozwoju produkcji ekologicznej i rynku żywności ekologicznej w Europie. Największe powierzchnie użytków rolnych zagospodarowanych pod uprawy ekologiczne są w tych krajach, w których rynek żywności ekologicznej jest największy, czyli w zamożnych krajach Europy Zachodniej. Jednak pokrycie zapotrzebowania na produkty ekologiczne z własnej produkcji w tych krajach nie jest możliwe i opiera się w znacznym stopniu na imporcie, w tym także z Polski. Z tego też względu produkcja ekologiczna w Polsce w szybkim tempie rozwija się, co jest szansą rozwoju dla wielu gospodarstw, zwłaszcza mniejszych obszarowo, oraz okazją do zagospodarowania nadwyżek siły roboczej tkwiących w polskim rolnictwie.

Słowa kluczowe: rolnictwo ekologiczne, produkcja ekologiczna, rynek żywności ekologicznej

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