

REVIEW ARTICLE

## CONDITIONS FOR THE DEVELOPMENT OF ECOLOGICAL AGRICULTURE IN WESTERN UKRAINE AGAINST POLISH EXPERIENCE

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**Abstract.** Ukraine ranks second in Europe (after Russia) in terms of the agricultural land. Approximately 70% of the country area (41.5 million hectares) is agricultural land, of which 32 million hectares are arable land. Serbia (0.1%), Ukraine (0.7%), Moldova (0.9%) and Macedonia (1.2%) are the non-EU countries with the lowest percentage of ecological farmland in relation to agricultural land. Ukraine has a great potential in the production of organically grown food. There is a need for environmentally friendly products, but organic food market is just beginning to develop. In Ukraine, the surface area of agricultural land used for organic production increases every year. A similar situation was observed also in Poland. The number of organic products offered on the Ukrainian market is limited. In Ukraine, the market for organic products began to develop only at the beginning of 2000. Most of the Ukrainian organic farms are located in areas of Odessa, Cherson, Poltava, Vinnitsa, Transcarpathia, Lviv, Ternopil and Zhitomir. Ukrainian organic farms can become more competitive in the future for the European market. Favorable natural conditions for the development of this type of agriculture and increasing demand for organic products are an opportunity for Ukrainian agriculture. Today, Ukraine ranks first in Eastern Europe in respect of organic acreage.

**Key words:** Ukraine, ecological agriculture, organic products

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Ukraine ranks second in Europe (after Russia) in terms of the agricultural land. Approximately 70% of the country area (41.5 million hectares) is agricultural land, of which 32 million hectares are arable land. In recent years, the Ukrainian agriculture recorded an increase in agricultural production. Cereal production in 2013 amounted to 63 million tons. The value of agri-food exports amounted to 17.9 billion USD, accounting for 25% of all Ukrainian exports [Sarna 2014].

Progressive development of ecological production in agriculture is particularly relevant due to a number of obvious benefits to the environment, economy and society. Requirements for organic farming include not only the food production itself, but are also beneficial for the environment. This ensures a balanced state of the ecosystem, which is the key to sustainable economic and social development [Runowski 2004].

Organic production in the world has been growing rapidly in recent years (Fig. 1). According to the International Federation of Organic Movement and Agriculture Movement (IFOAM), the total turnover of organic products in the world has reached 64 billion USD [Willer et al. 2014]. In 2012, the countries with the largest organic markets were the United States, Germany, and France. European sales of ecological products totalled approximately 22.8 billion EUR in 2012 (European Union: 20.9 billion EUR) [Willer et al. 2014].

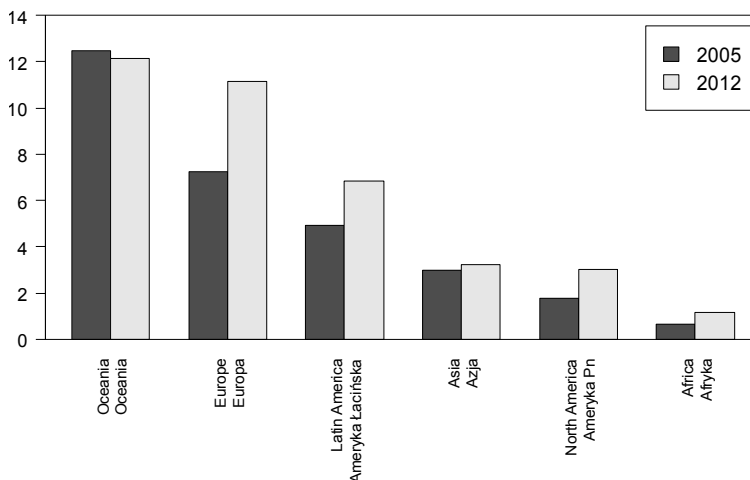


Fig. 1. Growth of the organic agricultural land by continent 2005 and 2012; source: own study based on data from Willer et al. [2014]

Rys. 1. Wzrost powierzchni upraw ekologicznych na poszczególnych kontynentach na przykładzie lat 2005 i 2012; źródło: opracowanie własne na podstawie danych Willer i wsp. [2014]

Currently, ecological production utilizes 37.2 million hectares of agriculture land. Australia, New Zealand and the South Pacific are the regions with the largest

area of agricultural land devoted to organic farming – 12.16 million hectares, followed by Europe – 11.17 million hectares, Latin America – 6.84 million hectares, Asia – 3.22 million hectares, North America – 3.01 million hectares and Africa – more than 1.15 million hectares (Fig. 2). In recent years in the European Union there was a rapid development of ecological agriculture. Countries with the largest number of agricultural land in the world are: Australia (12 million hectares), Argentina (3.6 million hectares) and the USA (2.2 million hectares) [Willer et al. 2014] (Fig. 3).

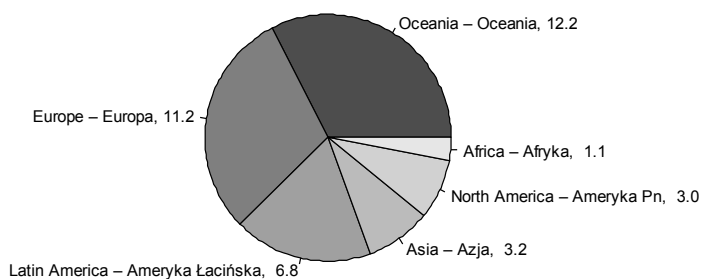


Fig. 2. Agriculture land area dedicated to organic farming (million hectares); source: own study based on data from Willer et al. [2014]

Rys. 2. Powierzchnia obszarów rolnych przeznaczona na rolnictwo ekologiczne (mln ha); źródło: opracowanie własne na podstawie danych Willer i wsp. [2014]

In the period from 1985 to 2012, the number of organic farms in the EU increased from 6058 to more than 240 000, and the area occupied by organic farming increased from 172 thousands hectares to 11.2 million hectares, which represents 2.3% of agricultural land [Willer et al. 2014]. Among the Member States, the largest proportion of ecological farmland in relation to agricultural land has Austria (19.7%), followed by Sweden (15.6%), Estonia (15.3%), Czech Republic (11.5%) and Latvia (10.8%). Among the non-EU countries, the largest share of ecological farmland in relation to agricultural land are Liechtenstein (29.6%) and Switzerland (12%). Serbia (0.1%), Ukraine (0.7%), Moldova (0.9%) and Macedonia (1.2%) are the non-EU countries with the lowest percentage of ecological farmland in relation to agricultural land [Wasilik 2014] (Fig. 4 and 5). The largest increases of ecological agricultural land were recorded in Greece, followed by Mexico, Kazakhstan and Turkey [Willer et al. 2014].

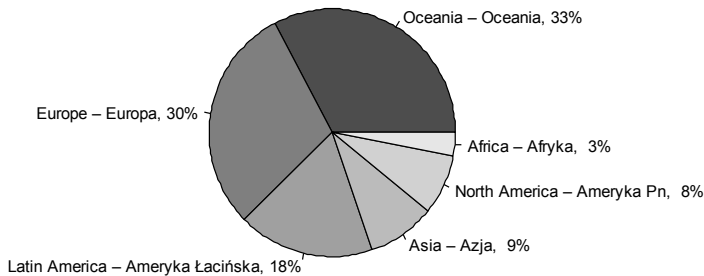


Fig. 3. Agriculture land area dedicated to organic farming (%); source: own study based on data from Willer et al. [2014]

Rys. 3. Powierzchnia obszarów rolnych przeznaczona na rolnictwo ekologiczne (%); źródło: opracowanie własne na podstawie danych Willer i wsp. [2014]

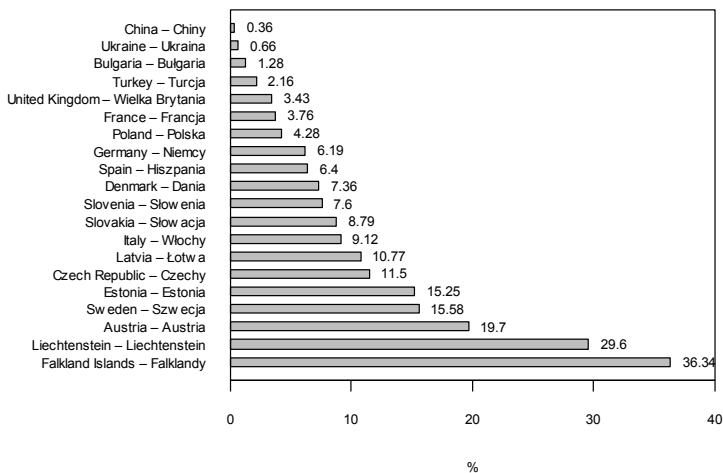


Fig. 4. Shares of organic agricultural land by country (2012); source: own study based on data from Willer et al. [2014]

Rys. 4. Udział rolnictwa ekologicznego w poszczególnych krajach (2012); źródło: opracowanie własne na podstawie danych Willer i wsp. [2014]

Ukraine has a great potential in the production of organically grown food. There is a need for environmentally friendly products, but organic food market is just beginning to develop. In Ukraine, the surface area of agricultural land used

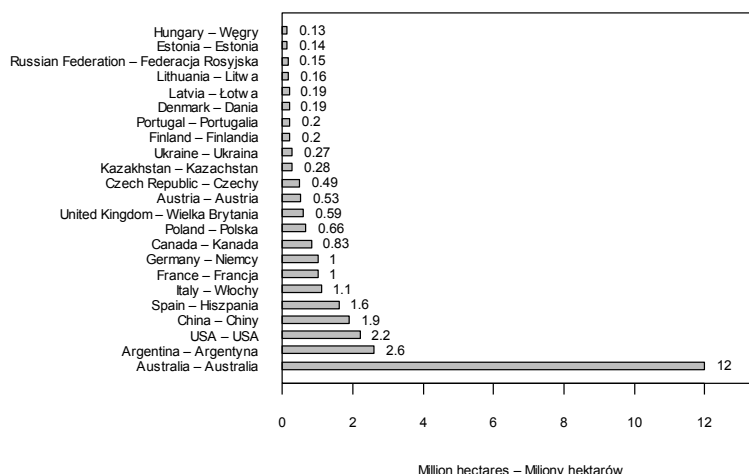


Fig. 5. Organic agricultural land (including conversion areas) by country (2012); source: own study based on data from Willer et al. [2014]

Rys. 5. Powierzchnia gospodarstw ekologicznych (z uwzględnieniem obszarów w konwersji) w poszczególnych krajach (2012); źródło: opracowanie własne na podstawie danych Willer i wsp. [2014]

for organic production increases every year. A similar situation was observed also in Poland [<http://www.minrol.gov.pl>].

In recent decades, in Ukraine, the population of cattle and poultry has significantly decreased. Genetic and production potential of this sector has been destroyed, and currently it is characterized by relatively low efficiency rates, a decline in livestock production and its redistribution by small homesteads, which may contribute to the development of organic farms. The most significant decline in cattle population in the Carpathian region occurred in the period 1991–2014, where the decrease in the number of cattle amounted to 72.2%, while of cows only 52.8% (Table 1).

The number of organic products offered on the Ukrainian market is limited. According to official statistics, the average consumer in Ukraine spends on organic products only 0.10 EUR per person, while in the European Union, the average European spends approximately 100 EUR.

In Ukraine, the market for organic products began to develop only at the beginning of 2000. Sales on this market in 2007 amounted to 500 000 EUR, in 2008 – 600 000 EUR, in 2009 – 1.2 million EUR, in 2010 – 2.4 million EUR, in 2011 – 5.1 million EUR, in 2012 – 7.9 million EUR, in 2013 sales rose to 12.2 million EUR [Orhanik v Ukrayini 2010]. The Polish organic food market is estimated at 400–500 million PLN [Jończyk 2014]. The development of organic farming in

Table 1. Changes in animal numbers in the Carpathian region (from 1st January) in thousands

Tabela 1. Zmiany liczby zwierząt w rejonie Karpackim (od 1 stycznia) w tys.

	Year – Rok							2014/1991 %
	1991	2001	2006	2011	2012	2013	2014	
Total number of farms – Łączna liczba gospodarstw								
Cattle – Bydło	2478.1	1265.6	955.3	697.5	675.7	704.9	688.3	27.8
cows only – w tym krowy	911.8	790.8	619.1	455.5	444.7	440.6	430.7	47.2
Pigs – Świnie	1372.6	823.2	823.6	1007.1	991.1	1026.0	1080.8	78.7
Sheep and goats – Owce i kozy	551.3	248.2	218.8	229.6	239.5	272.5	278.3	50.5
sheep only – w tym owce	492.0	150.8	135.0	154.7	160.6	186.3	189.0	38.4
Horses – Konie	98.9	122.9	108.2	87.3	84.4	81.6	78.9	79.8
Birds – Ptaki	24248.5	15327.2	17161.6	21215.3	21149.1	21674.9	21808.4	89.9
Industrial farms – Gospodarstwa przemysłowe								
Cattle – Bydło	1559.6	227.1	98.7	52.4	52.7	53.0	50.3	3.2
cows only – w tym krowy	396.8	74.6	33.8	20.6	20.2	19.8	19.3	4.9
Pigs – Świnie	572.8	56.6	102.4	328.4	340.2	369.2	408.6	71.3
Sheep and goats – Owce i kozy	381.4	21.0	18.0	27.1	29.8	31.8	30.0	7.9
sheep only – w tym owce	381.1	20.7	17.6	25.8	28.5	30.1	28.4	7.5
Horses – Konie	90.1	25.9	7.8	2.7	2.3	2.1	2.0	2.2
Birds – Ptaki	10436.5	683.3	3741.8	8157.4	7824.1	7951.3	7784.9	74.6
Farmers – Farmerzy								
Cattle – Bydło	7.3	11.8	11.3	11.2	12.3	14.4	14	191.8
cows only – w tym krowy	4.0	5.3	4.0	4.8	4.9	5.3	5.4	135.0
Pigs – Świnie	8.2	4.4	13.2	41.0	33.0	33.4	39.6	482.9
Sheep and goats – Owce i kozy	7.2	2.5	9.8	20.2	22.4	24.5	22.7	315.3
sheep only – w tym owce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horses – Konie	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Birds – Ptaki	0.0	23.6	627.9	1903.2	1942.4	2096.2	1988.3	0.0
Small homesteads – Małe gospodarstwa domowe								
Cattle – Bydło	918.5	1038.5	856.6	645.1	623.0	651.9	638.0	69.5
cows only – w tym krowy	515.0	716.2	585.3	434.9	424.5	420.8	411.4	79.9
Pigs – Świnie	799.8	766.6	721.2	678.7	650.9	656.8	672.2	84.0
Sheep and goats – Owce i kozy	169.9	227.2	200.8	202.5	209.7	240.7	248.3	146.1
sheep only – w tym owce	110.9	130.1	117.4	128.9	132.1	156.2	160.6	144.8
Horses – Konie	8.8	97.0	100.4	84.6	82.1	79.5	76.9	873.9
Birds – Ptaki	13812.0	14643.9	13419.8	13057.9	13325.0	13723.6	14023.5	101.5

Poland was influenced by the integration with the European Union, primarily by the subsidies and greater ecological food sales opportunities, to a lesser extent, by the development of tourism and agritourism.

At the beginning of 2003, in Ukraine, there were 31 farms that received the organic status, while in 2012, there already were 5-fold more (164 certified farms)

[Tomashevskaya 2013]. Obstacle for farmers producing organically in Ukraine are sales of their products, mainly the accumulation of low number and quantity of the products, the lack of a sufficient number of processing plants and the lack of producer organizations (Table 2).

Table 2. The dynamics of indices characterizing the development of organic production in Ukraine [Orhanik v Ukrayini 2010]

Tabela 2. Dynamika wskaźników charakteryzujących rozwój produkcji ekologicznej na Ukrainie [Orhanik v Ukrayini 2010]

Index – Wskaźnik	Year – Rok						
	2002	2005	2008	2009	2010	2011	2012
Total area of organic farms, ha Łączna powierzchnia gospodarstw ekologicznych, ha	164 449	241 980	269 984	270 193	270 226	270 320	272 850
Share of organic farming in the total area of agricultural land Udział upraw ekologicznych w ogólnej powierzchni użytków rolnych	0.39	0.58	0.65	0.65	0.65	0.65	0.66
Growth rate of the total area of organic farms Tempo wzrostu łącznej powierzchni gospodarstw ekologicznych	–	1.008	1.080	1.000	0.999	1.000	1.009
Number of farms Liczba gospodarstw	31	72	118	121	142	155	164
Growth rate in the number of farms Tempo wzrostu liczby gospodarstw	–	1.028	1.282	1.025	1.173	1.091	1.058

Most of the Ukrainian organic farms are located in areas of Odessa, Cherson, Poltava, Vinnitsa, Transcarpathia, Lviv, Ternopil and Zhitomir. The size of these farms varies widely, from a few (as in most European countries), to more than ten thousand hectares of arable land [Orhanik v Ukrayini 2010]. The Ukrainian Carpathian region has great possibilities and conditions for the development of organic production. Among the advantages of this region are dynamic development of tourism and recreation, development of international cooperation in the field of production of organically grown food, tourism and recreation services for their own citizens and visitors from other countries.

In Poland, the development of farms producing organically is also not uniform. Most agricultural land used by organic farms is located in Western Pomerania voivodeship (13.6%), Warmia and Mazury voivodeship (9.4%) and Lubusz voivodeship (9%), while the least in the Opole voivodeship (0.5%), Kuyavian-Pomeranian voivodeship (0.8%), Łódź voivodeship (0.9%) and Silesian voivodeship (1.5%). The average area of organic farms in Poland is 25.8 hectares [Jończyk 2014].

Organic production requires a good legal framework. According to the Research Institute of Organic Agriculture (FiBL), there are 88 countries fulfilling organic standards. Twelve countries are in the process of developing legal regulations. The adoption of organic law was an important event in Ukraine in 2013 [Willer et al. 2014].

Ukrainian organic farms can become more competitive in the future for the European market. Favorable natural conditions for the development of this type of agriculture and increasing demand for organic products are an opportunity for Ukrainian agriculture. Today, Ukraine ranks first in Eastern Europe in respect of organic acreage.

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## **UWARUNKOWANIA ROZWOJU ROLNICTWA EKOLOGICZNEGO W ZACHODNIEJ UKRAINIE NA TLE DOŚWIADCZEŃ POLSKI**

**Streszczenie.** Ukraina zajmuje drugie miejsce w Europie (po Rosji) pod względem powierzchni użytków rolnych. Około 70% powierzchni państwa (41,5 mln ha) stanowią użytki rolne, z czego 32 mln ha to grunty orne. Kraje spoza Unii z najniższym udzialem powierzchni ekologicznej względem użytków rolnych to Serbia (0,1%), Ukraina (0,7%), Mołdawia (0,9%) oraz Macedonia (1,2%). Ukraina posiada duży potencjał w produkcji żywności metodami ekologicznymi. Istnieje zapotrzebowanie na produkty przyjazne dla środowiska, ale rynek żywności ekologicznej dopiero zaczyna się rozwijać. Na terenie Ukrainy z każdym rokiem wzrasta wielkość powierzchni użytków rolnych, na których prowadzona jest produkcja ekologiczna. Podobną sytuację obserwowano również na terenie Polski. Liczba produktów ekologicznych oferowanych na rynku ukraińskim jest ograniczona. Dopiero na początku 2000 r. na terenie Ukrainy zaczął rozwijać się rynek produktów ekologicznych. Większość ukraińskich gospodarstw ekologicznych zlokalizowanych jest w rejonach Odessy, Chersonu, Połtawy, Winnicy, Zakarpacia, Lwowa, Tarnopola oraz Żytomierza. Ukraińskie gospodarstwa ekologiczne mogą stać się w przyszłości bardziej konkurencyjne dla europejskiego rynku. Szansą dla ukraińskiego rolnictwa ekologicznego jest posiadanie sprzyjających warunków naturalnych do rozwoju tego typu rolnictwa oraz wzrastający popyt na produkty ekologiczne. Obecnie Ukraina zajmuje pierwsze miejsce w regionie Europy Wschodniej pod względem powierzchni upraw ekologicznych.

**Słowa kluczowe:** Ukraina, gospodarstwa ekologiczne, produkty ekologiczne

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