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## ANALYSIS OF THE PERFORMANCE OF ORGANIC FARMS IN POLAND IN 2005–2020

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**Abstract.** The objective of the present work is to evaluate the performance of organic farms, their production potential, the size of crop and livestock production and the opportunities for their development in Poland in the years 2005–2020. The work draws on statistical data published by the Agricultural and Food Quality Inspection (IJHARS) from the years 2005–2021. The data was characterised by calculating the dynamics index. Moreover, 18 organic farms located in the Mazowieckie Voivodship were surveyed. The primary data was collected using the direct interview method at the end of 2020. The results were used to calculate the number and percentage of organic farms. In the studied period, that is in the years 2005–2020, a variety of changes took place in organic farming in Poland. Until 2013, there occurred a steady increase in the number and area of organic farms. From 2014 to 2020, the number dropped by 30% whereas the organically farmed area decreased by 24%. What is more, a decline in the number of medium-sized farms (5–20 ha) was accompanied by a rise in the number of larger farms (whose area exceeded 20 ha). There were also noticeable changes in the structure of land use, organic production being abandoned in grasslands (meadows and pastures) in favour of cereals and other crops, orchards, berries and field vegetables. In the years 2005–2020, there was a positive trend of growing numbers of livestock, that is dairy cows, sheep, goats, it being particularly high for young beef cattle and laying hens. By contrast, a decline was observed in the number of fattening swine. The causes of the declining numbers of organic farms and organically managed area are economic in character and include scattered production, difficulties with selling organic products, strong reliance of organic production, animal production in particular, on public support, high costs and low profitability of this type of agricultural activity and low incomes earned by organic farms. The future performance of organic holdings and the development of this type of agriculture will be conditioned by both economic and organisational factors, as well as sufficient support of organic production, integration and cooperation among entities operating in this sector, well organised market as well as availability and promotion of organic products, which will hopefully increase demand on and marketisation of this production. It is important that organic farms should rely on balance between crop and livestock production so as to expand mixed production, which, in turn, will let them gain competitive advantage and become part of the concept of sustainable development.

**Key words:** organic farms, crop structure, livestock number, development plans.

## INTRODUCTION

Organic farming is an alternative to conventional agricultural management systems. A model organic agricultural holding involves the harmonious pursuit of ecological, economic, and social objectives. Organic farming is a type of agriculture which combines sustainable plant and animal production, makes use of environmentally friendly practices, enhances biodiversity, and relies on natural processes while ensuring animal welfare, and employing production methods based on natural processes (EU Council Regulation No 834/2007).

Organic farming is also referred to as natural, biological, or biodynamic agriculture. Definitions of organic farming always include economic, social, environmental, health, ethical, and aesthetic benefits derived from the principles of sustainable development (Sadowski et al. 2021).

According to the European Parliament and Council of the European Union (EP and CEU Regulation No 848) of 30 May 2018, “organic production is an overall system of farm management and food production which combines best environmental and climate action practices, a high level of biodiversity, the preservation of natural resources, and the application of high animal welfare standards and high production standards in line with the demand of a growing number of consumers for products produced using natural substances and processes”. Specific regulations in Poland regarding organic production risk and labelling of organic products are laid down in the Act of 23 June 2022 on Organic Farming and Organic Production (Ustawa 2022). Only products certified within the organic farming system can be sold as organic. At every stage of organic production, including preparation, storage, transportation, and distribution, strict control measures are exercised. The law defines both the control and inspection system and the competencies of bodies responsible for issuing permits and certificates.

According to the European Commission (2020), organic farming is an agricultural production method that pursues environmental and nature conservation goals, particularly concentrating on livestock welfare. The principles of the European Green Deal (EGD) have pointed to the transition to a circular economy and achieving sustainable development as the main priority for the EU. Organic farming aligns with the advocated green transformation and the comprehensive efforts aimed at eliminating water, air, and soil pollution that have been made for several years.

Organic agriculture is a sustainable, integrated system of producing safe, high-quality certified food. It is assumed to operate in a way that brings economic, environmental and social benefits. A characteristic of organic farming is designing good crop rotations and excluding an application of fertilisers and pesticides. Organic production ought to solely rely on natural methods (Staniak 2014) employed to obtain products with appropriate properties. They need to meet specific production and quality requirements confirmed by certificates and inspections performed to recognise them as organic (Łukasiński 2008). Reganold and Wachter (2016) state that organic farming combines traditional environmental protection-oriented cultivation methods with modern approach to agriculture. It highlights crop rotation, cultivation, and livestock, soil enhancement through compost, farmyard manure, and green manure applications.

The objective of organic farming is to produce high-quality food while maintaining a biological balance in the natural environment. Production relying on organic methods is a way of obtaining products without disrupting the natural environmental balance. Organic products are perceived as agricultural goods of high biological quality, free from residues of synthetic

fertilisers and plant protection chemicals. Organic holdings should strive for a balance between crop and animal production (Wrzaszcz 2017), so as to most comprehensively align with the concept of sustainable development of the environment (Głogowska and Gałązka 2017; Zegar 2018). Organic production should, therefore, combine environmentally friendly farming practices, support high levels of biodiversity, utilise natural processes, and maintain proper animal welfare.

Žmija (2016) claims that organic farming is of marked importance to the concept of sustainable development so as to contribute to improving the quality of life in rural areas, enhance agricultural effectiveness, maintain biodiversity, and preserve traditional agricultural landscapes. These actions can be achieved through the support and promotion of organic types of activities, which will enable the production of high-quality food. It ought to be stressed that the organic farming system is dual in nature as it positively affects the natural environment, which leads to broadly understood agro-environmental benefits, and is a response to the changing structure of demand in the food market. Consumers are inclined towards organic products, are willing to purchase them and, generally, pay a higher price compared to conventionally produced items. Hence, the organic farming system can be claimed to be based on market criteria.

Organic farming is one of the most rapidly growing branches of agriculture in the EU. In Poland, the market for organic products is developing, although not as expected. Barriers arise both in terms of supply and demand for organic products. The demand for organic products is increasing slightly, but their availability is relatively low, and prices are high (Golik and Žmija 2017). Łuczka (2019) also mentions a growing interest in organic agriculture in EU countries. The author claims that the system positively influences the natural environment, which contributes to a wide variety of agricultural and environmental benefits. In 2020, the share of organically managed land was 8.0% in the EU, 3.5% in Poland, 8.3% in Lithuania, 10.0% in Slovakia, and 12.8% in the Czech Republic (Sadowski et al. 2021). In Slovakia, where organic farming has existed since 1991, the growth in organically managed area occurred many years after accession to the EU. Similarly to Poland, support is directed towards establishing and developing organic holdings, as well as minimising production and economic differences between organic and conventional farms (Palsova et al. 2014). Golik and Žmija (2017) also point out that differences between these two types of farms have decreased in recent years, partly due to higher levels of financial support for organic farms, and are linked to the idea of sustainable production.

Organic agriculture is a response to the changing market structure due to the increasing demand for organic products. In many EU countries, this translates into their system of granting financial support to such farms which earn their income from market activities supplemented by public assistance. The majority of organic farms are unable to generate sufficient income due to their low productivity. Public support influences organic production; without it, this production would be financially unviable. The development of organic farms in Poland occurred only after the country's accession to the EU, mainly as a response to stimulating financial support (Sadowski et al. 2021; Miecznikowska-Jerzak 2022).

Organic farming is a relatively new production system whose importance is growing in Poland and worldwide. Currently, agriculture faces numerous challenges generated by changing trends in the food market; there is a need to ensure an adequate quantity and quality of food products. However, the primary challenge lies not only in the quantity but also in the quality of products. There is also an increasing ecological awareness of the society to

consider. A shift is observed from industrial agriculture towards multifunctional and sustainable farming which also encompasses organic farming (Abumhadi et al. 2012; Zhang 2017).

The purpose of the work reported here is to evaluate the performance of organic farms in Poland, as well as their production potential, the size of plant and animal production and the possibilities for their development between 2005 and 2020.

## MATERIALS AND METHODS

The work draws on statistical data published by the Agricultural and Food Quality Inspection (Ijhars) from 2005 to 2021. The data was characterised by calculating the dynamics index ( $i_{vt-1}$ ). Expressed as a percentage, this indicator reveals by what percent the level of a phenomenon in a given period is higher or lower compared to the level in the reference period (Ostasiewicz et al. 1999). Additionally, 18 organic farms located in the Mazowieckie Voivodeship were surveyed. Primary data was collected through direct interviews at the end of 2020, using a questionnaire as a research tool. The results were used to calculate the number and percentage of the farms. Descriptive and tabular methods were applied to analyse both the statistical data and the survey responses.

## RESULTS

### Organic farms in light of published statistical data

Organically farmed area underwent significant changes between 2005 and 2020 (Table 1). In the initial years following Poland's accession to the EU, the area planted to organic crops increased consistently. In 2005, compared to 2004, it rose just over two-fold, and in 2010, compared to 2009, it increased by nearly 25%. From 2015 to 2019, there was a gradual decline in the share of organically farmed land. In 2015, there was a decrease of slightly over 13% compared to the previous year, and in 2020, the area allocated for organic cultivation amounted to 509.3 thousand ha, showing a marginal increase of only 0.3% compared to 2019.

Table 1. Area planted to organic crops in Poland in 2005–2020 (in thousand ha)

Years	Farmland area	Change compared to the previous year (in %)
2005	166.3	101.1
2010	519.1	24.7
2015	580.7	-13.3
2020	509.3	0.3

Source: own calculations based on Ijhars (2005–2021).

Similarly to the area of organic farmland between 2005 and 2020, the number of organic farms fluctuated (Table 2). The highest increase of 94% occurred in 2005 compared to 2004. However, in the following years, there was a decreasing trend: an increase of just over 20% in 2010 and a substantial decrease of slightly over 13% in 2015. In 2020, the number of organic agricultural holdings was 18.58 thousand, showing a 0.3% decrease compared to the previous year.

Table 2. The number of organic farms in Poland in 2005–2020 (in thousands)

Years	Number of farms	Change compared to the previous year (in %)
2005	7.18	94.0
2010	20.58	20.4
2015	22.28	-10.3
2020	18.58	-0.3

Source: own calculations based on IJHARS (2005–2021).

In 2005–2020, there were gradual transformations in the structure and area of organically farmed land (Table 3). In both 2005 and 2020, the most prevalent were farms whose area ranged from 10 to 20 ha (respectively, 26.2 and 24.8% of the total number of organic farms). Over the period of 15 years, there was a significant decline in the share of farms with the area of 5 to 10 ha (by 28.4%), while the share of farms with the area ranging from 20 to 50 ha and above 50 ha increased (by 31.8 and 14.5%, respectively). There was a slight increase in the percentage of very small farms, that is with the area of up to 5 ha (by 4.2%) while, simultaneously, the percentage of medium-sized farms, from 10 to 20 ha, dropped (by 5.3%).

Table 3. The structure of the area of organic farms in Poland between 2005 and 2020

Area (in ha)	Share of farms (in %)		Change in the share 2020/2005 (in %)
	2005	2020	
Below 5.00	19.2	20.0	4.2
5.01–10.00	24.3	17.4	-28.4
10.01–20.00	26.2	24.8	-5.3
20.01–50.00	17.9	23.6	31.8
Over 50.00	12.4	14.2	14.5

Source: own calculations based on IJHARS (2006, 2021).

In 2005–2020, marked changes occurred in the structure of land planted to organic crops (Table 4). In 2005, meadows and pastures held the largest share in this structure (almost 50%), followed by cereals and other crops (slightly over 44%). In 2020, compared to 2005, the share of meadows and pastures decreased nearly twofold while cereals and other crops increased by almost 55%. There was a notable increase (by 84%) in the area dedicated to fruit and berry cultivation and an over threefold increase in field vegetable cultivation.

Table 4. The structure of the area under organic crops in Poland between 2005 and 2020

Type of crop	Share of crops (in %)		Change in the share 2020/2005 (in %)
	2005	2020	
Meadows and pastures	49.6	16.9	-65.9
Cereals and other crops	44.1	68.3	54.9
Fruit and berry cultivations	5.0	9.2	84.0
Field vegetables	1.3	5.6	330.8

Source: own calculations based on IJHARS (2006, 2021).

During the period of 2005–2020, there were significant changes in the population of various animal species raised on organic farms (Table 5). In 2020, compared to 2005, the number of young beef cattle increased 2.6 times while the number of laying hens rose 3.8 times. Over the study period, there was also a considerable increase in the population of goats, dairy cows and sheep, the rise amounting to, respectively, 1.69, 4.26 and 3.6 thousand (85.7, 54.6 and 29.6%). By contrast, a substantial (over twofold) decrease occurred in the number of fattening pigs which dropped by 7.20 thousand animals.

Table 5. Numbers of animals in herds of selected livestock species on organic farms in Poland between 2005 and 2020 (in thousands)

Animal species	Years		Change in the number 2020/2005 (in %)
	2005	2020	
Dairy cows	7.80	12.06	54.6
Young beef cattle	2.34	8.34	256.4
Fattening pigs	10.45	3.25	-68.9
Sheep	12.19	15.80	29.6
Goats	1.96	3.64	85.7
Lying hens	145.72	696.15	377.7

Source: own calculations based on IJHARS (2006, 2021).

### Performance of organic farms based on survey data

The average age of organic farm owners was 50. Of the 18 organic farms surveyed, 16 were managed by males. A significant portion of owners (62%) did not have agricultural qualifications, with only 3 out of 18 having a degree. Completion of agricultural courses and specifically organic farming courses served as the basis for engaging in agricultural activities. The surveyed farms had been involved in organic farming for an average of 16 years. The average size of these farms was 11.77 ha. The group of farms with the area of up to 5 ha accounted for 39% of the total number and was the most numerous, while farms exceeding 20 ha represented the smallest share at 11%. These farms primarily focused on plant growing (61%), while the rest (39%) engaged in a mixture of plant and animal production.

On the surveyed organic farms, the majority of crops were cultivated in either one or two large areas (37 and 36%, respectively), or in a main area and several smaller fields (27%). Perennial crops represented the largest portion (35%) of the total area in the surveyed farms. Arable land also held a significant share (30%) of the total area, while meadows and pastures accounted for the least (14%). Forests (26%) and uncultivated land (1%) constituted the remaining part. The primary crop plants were cereals (50%) followed by potatoes (33%) and perennial plants such as chokeberry and currants (39% of farms). Farmers engaged in mixed production raised rabbits (56%), poultry (28%), pigs (17%), cattle (17%), and goats (17% of farms). Additionally, two farms also kept beehives with three colonies each. Farmyard manure was the most frequently applied fertiliser (67%), followed by compost (56%), liquid manure (17%), and green manure (17% of farms). Biological pest control was applied by 10 out of 18 surveyed organic farms (56%), predominantly using extracts from herbal plants (44%) and "Effective Microorganisms" (44%), while mineral substances of natural origin were used less frequently (11% of farms).

Of the products from the organic farms, as much as 67%, were sold through intermediaries, while 22% were sold directly on the farm, and the remaining 11% were distributed

through selected shops. For advertising and promotion purposes, farmers participated in various trade fairs and exhibitions, and they also advertised their products online.

The major factor behind the decision to convert to organic farming is the desire to generate additional income, alongside organic food production and promotion (Table 6). Farmers expressed general satisfaction with the organic production they were conducting but they were unable to expound on the future of their farms (Table 7). They were also uncertain about the potential succession of their farms by younger generations. According to the farmers, organic farming is barely profitable, yet the increased interest of consumers in organic food offers an opportunity for further development of such farms. All the respondents emphasised the need for greater promotion of organic products, with a large majority of them planning direct sales of organic food in the future.

Table 6. Factors influencing the decision to engage in organic farming

Specification	Number of farms	% of farms
The desire to earn additional income	18	100.00
Example provided by farmers running organic farms	3	16.7
The desire to produce and promote organic food	11	61.1
Concern for environmental protection	3	16.7

Source: own calculations based on questionnaires.

Table 7. The future of organic farms according to their owners (respondents)

Specification	Number of farms	% of farms
Satisfaction with the decision to convert to organic farming:		
– yes	12	66.7
– no	2	11.1
– hard to say	4	22.2
Profitability of organic production:		
– yes, profitability index at 10–15%	10	55.6
– no	2	11.1
– hard to say	6	33.3
Plans for the future:		
– increasing the farm's area	4	22.2
– handing over the farm to the younger generation	4	22.2
– broader promotion of organic products	18	100.0
– direct sales of organic food	15	83.3

Source: own calculations based on questionnaires.

## DISCUSSION

In 2020, the share of organically managed area in the agricultural land was 3.5% (compared to the EU average of 8.5%) while the share of organic farms in the total number of farms was only 1.4% (Eurostat 2022). Since 2014, a decline in both the area planted to organic crops and the number of organic farms has been observed in Poland. Between 2014 and 2020, the number of Polish organic farms decreased by over 30% (from 26.6 thousand to 18.6 thousand); during the same period, the area of organically farmed land decreased by 24%. Difficulties in organic agricultural production stem from economic and social circumstances,

including the consumer purchasing power in the organic food market, as well as the condition of agriculture in Poland (Miecznikowska-Jerzak 2022). This trend runs contrary to the expectations of the Common Agricultural Policy which aimed to allocate 25% of agricultural land to organic management by 2023.

Over the years, starting from 2004, noticeable changes have taken place in the structure of organic cultivation. The share of area planted to cereal crops has gradually increased while the share of fodder crops, pastures and meadows has declined. In 2020, the area designated for organic production reached 509.3 thousand ha. Crop production dominated, with 33.1% of the organically farmed land devoted to cereal cultivation, followed by fodder crops at 23.1%, legumes at 7.4%, and industrial plants at 4.7%, totalling 68.3% of the overall organically managed area. Meadows and pastures accounted for 16.9% of the total organic land, orchards and berry cultivation 9.2% and vegetables 5.6%. There have been major changes in the livestock structure on these farms over the analysed years: the populations of young beef cattle and laying hens rose (respectively, a 2.6- and 3.8-fold increase), while the pig population significantly decreased (an over 2-fold drop). Bombik et al. (2015, 2020) pointed out that the popularity of organic poultry production stemmed from customer interest in products such as eggs for consumption, the profitability of this production, and the ease of adapting buildings and outdoor spaces to meet the needs of these animals. The decline in the pig herd was likely due to the occurrence of African Swine Fever (ASF) and the associated biosecurity requirements.

Compared to conventional methods, organic production requires a larger area of agricultural land and greater labour inputs to achieve similar economic goals. Organic farming is transitioning towards an increased farm size. According to the Central Statistical Office (GUS 2021), the agricultural land area of organic farms is twice as high as the area of farms in general (25.2 and 10.3 ha, respectively). Changes in farm sizes in the studied period show positive trends, with a significant increase, of nearly 38%, in the share of farms larger than 20 ha, while the proportion of medium-sized farms, from 5 to 10 ha, decreased. Orłowska (2019) assessed the efficiency and competitiveness of Polish organic farms with varying production potentials, intensity, and production costs. Her findings indicated that the production potential, efficiency, and competitiveness of Polish organic holdings were dependent on their economic size. Farms with approximately 40 ha of agricultural land were competitive whereas smaller farms, despite subsidies, lacked competitiveness and earned very low incomes.

Golik and Žmija (2017) analysed the potential and development trends of organic farming in selected EU countries, assessing the prospects and opportunities for the development of this sector in Poland. They found that the structure of organically managed areas in the EU was dominated by meadows and pastures (around 40%), followed by fodder plants (around 30%) and cereal cultivation (around 18%). A similar structure existed in organic agricultural areas in Poland, while in Slovakia, meadows and pastures had the greatest share in the structure (around 82%), followed by organic cereals (around 9%). According to Eurostat data in 2020 (Eurostat 2021), in the structure of organic areas in the EU, arable land (cereals, root crops, industrial crops, vegetables) occupied the first place, accounting for 46% of the organic area, permanent grasslands (pastures and meadows) constituted 43% of the eco-area, while permanent crops, including fruit orchards, berry plantations, olive groves, and vineyards, were only on 11% of the total area.

Nachtman (2021) assessed the production and economic situation of organic farms, considering the mechanisms of the EU agricultural policy. The author pointed to economic factors as the reasons for the abandonment of organic farming, including production



scattering hindering sales, small farm size making it challenging to organise production according to organic standards, high administrative burden, lack of significant support for organic livestock production, and low profitability and income. The development of the organic agriculture sector relies on financial support and a rational agricultural policy which offers assistance to farmers while enforcing environmental recommendations. Similarly, Miecznikowska-Jerzak (2022) presented the current state of organic farming in Poland compared to other EU member states, and highlighted the prospects for organic production development in the context of changes promoted within the European Green Deal in agriculture.

Sadowski et al. (2021) believe that despite being aware of the many benefits of organic food and its social and environmental functions, some researchers critically assess organic farming in Poland, highlighting production inefficiency, farm unprofitability and significant reliance on public support. The authors have demonstrated that organic farms in Poland have lower production potential than conventional farms and less favourable relationships between production factors. Yields and animal productivity are also lower. They achieve considerably poorer economic results, are less profitable, and heavily rely on public support. Also Gołaś (2017) and Sadowski et al. (2021) have found that organic farms have lower production potential and less favourable relationships between production factors than conventional farms. Yields and livestock productivity are poorer as well. The crucial point is that they achieve much lower economic results, mainly generated by direct subsidies. The authors also point to the high production inefficiency and lack of profitability of organic farming, emphasising its heavy reliance on public support. Results of the survey reported here confirm this finding, with respondents highlighting the need for higher agricultural incomes, the relatively low profitability of organic production, and the poor promotion of organic food.

According to IJHARS (2021), nearly 8 out of 10 organic farms in Poland (that is 78.2%) focused exclusively on crop production in 2020 while only 21.8% simultaneously engaged in both crop and livestock production. Sadowski et al. (2021) point out that the considerably lower production potential of organic farms, both in terms of crop cultivation and animal husbandry, suggests that this type of agriculture should be seen more as a niche activity than an alternative to conventional farming. Conversion from conventional agriculture to organic farming could result in a substantial decline in production volume, posing a threat to food security.

## **CONCLUSION**

In the analysis spanning the years 2005–2020, numerous changes characterised the development of organic farming in Poland. Until 2013, there was a consistent increase in both the number of organic farms and the size of their area. However, from 2014 to 2020, the number of organic farms decreased by 30% with a 24% decline in the organically managed area. There was also a decline in the number of medium-sized farms (5–20 ha) while larger holdings (exceeding 20 ha) increased in number. Changes in land use structure occurred with a substantial withdrawal from organic management of meadows and pastures and an increase in the area under organic cereals and other crops, orchards, berry cultivation and root vegetables. Notably, there was a favourable increase in livestock numbers in 2005–2020, including dairy cows, sheep, goats, particularly young beef cattle and laying hens, although a significant decrease in fattening pig numbers was observed.

The decreasing number of organic farms and the reduction in organically managed area can mainly be attributed to economic factors such as production scattering, difficulties in selling organic products, heavy reliance of organic production, especially in the livestock production sector, on public support, high costs, low profitability, and the low income earned by these farms.

The future existence of organic farms and the development of this type of agriculture will be influenced by both economic and organisational factors. Adequate support for organic production, integration and cooperation among entities in this sector, a well-organised market, and the availability and promotion of organic products will affect demand growth and marketability of this production. It is important for organic farms to achieve a balance between crop and livestock production, aiming to expand mixed production, which may enable them to gain competitive advantage and align with the concept of sustainable development.

## REFERENCES

- Abumhadi N., Todorovska E., Assenov B., Tsonev S., Vulcheva D., Vulchev D., Atanasova L., Savova S., Atanassov A.** 2012. Agricultural research in 21st century: Challenges facing the food security under the impacts of climate change. *Bulgarian J. Agric. Sci.* 18(6), 801–818.
- Bombik E., Korzeniewska A., Maliszewski G.** 2020. Characterization of table eggs-producing organic farms in Mazowieckie Voivodeship. *Acta Sci. Pol. Zootechnica* 19(2), 29–36. DOI: 10.21005/asp.2020.19.2.04.
- Bombik E., Łagowska K., Bednarczyk-Szurmak M., Różewicz M., Janocha A.** 2015. Characterization of table eggs-producing organic farms in Lublin Voivodeship. *Acta Sci. Pol. Zootechnica* 14(2), 55–66.
- European Commission.** 2020. Farm Accountancy Data Network, <https://ec.europa.eu/agriculture/rica/>, access: 04.04.2020.
- Eurostat.** 2021, 2022. Statystyki dotyczące rolnictwa ekologicznego, access: 30.09.2022 [in Polish].
- Głogowska M., Gałązka A.** 2017. Wpływ rolnictwa ekologicznego na środowisko w koncepcji rozwoju zrównoważonego [Impact of organic farming on natural environment within the concept of sustainable development]. *Więś Roln.* 2, 147–165. DOI: 10.53098/wir022017/07 [in Polish].
- Golik D., Żmija D.** 2017. Rolnictwo ekologiczne i perspektywy jego rozwoju w Polsce w świetle doświadczeń unijnych [Organic farming and the prospects for its development in Poland in the light of the European Union's experience]. *Zesz. Nauk. UEK* 1(961), 117–129. DOI: 10.15678/ZNUEK.2017.0961.0108 [in Polish].
- Gołaś Z.** 2017. Organizacja, produktywność oraz dochodowość ekologicznych i konwencjonalnych gospodarstw rolnych ukierunkowanych na chów bydła mlecznego [Organization, productivity and profitability of organic and conventional dairy farms]. *Infrastrukt. Ekol. Teren. Wiej.* 1(1), 101–117 [in Polish].
- GUS.** 2021. Rolnictwo w 2020 r., access: 1.10.2022 [in Polish].
- IJHARS.** 2005–2021, access: 30.09.2023 [in Polish].
- Łuczka W.** 2019. Changes in the behavior of organic food consumers. *Ekon. Środ.* 70(3), 140–153.
- Łukasiński W.** 2008. Zarządzanie jakością produktu ekologicznego [Organic product quality management]. *Żywn. Nauka. Technol. Jakość* 1(56), 146–153 [in Polish].

- Miecznikowska-Jerzak J.** 2022. Stan i perspektywy rolnictwa ekologicznego w Polsce – ocena wyzwań i stan wdrażania Europejskiego Zielonego Ładu w rolnictwie [The status and prospects of organic farming in Poland – assessment of challenges and opportunities for the implementation of the European Green Deal for agriculture]. *Rocz. Integr. Eur.* 16, 265–283. DOI: 10.14746/rie.2022.16.16 [in Polish].
- Nachtman G.** 2021. Rolnictwo ekologiczne w Polsce wobec działań na rzecz jego rozwoju [Organic farming in Poland and activities undertaken for its development]. *Wiad. Stat.* 66(7), 24–43. DOI: 10.5604/01.3001.0015.0352.
- Orłowska M.J.** 2019. Competitiveness of Polish organic farms with different economic size in light of FADN data. *Ann. PAAAE* 21(2), 217–224. DOI: 10.5604/01.3001.0013.2074.
- Ostasiewicz S., Rusnak Z., Siedlecka U.** 1999. *Statystyka. Elementy teorii i zadania*. Wrocław: Wydaw. AE we Wrocławiu, 385 [in Polish].
- Palsova L., Schwarczova L., Schwarcz P., Bandlerova A.** 2014. The support of implementation of organic farming in the Slovak Republic in the context of sustainable development. *Procedia Soc. Behav. Sci.* 110, 520–529. DOI: 10.1016/j.sbspro.2013.12.896.
- Reganold J.P., Wachter J.M.** 2016. Organic agriculture in the twenty-first century. *Nat. Plants* 2(2), 15221. DOI: 10.1038/nplants.2015.221.
- Rozporządzenie Parlamentu Europejskiego i Rady UE nr 848 z dnia 30 maja 2018 r. w sprawie produkcji ekologicznej i znakowania produktów ekologicznych.** Dz.U. L 150 z 14.06.2018 r., access: 20.10.2022 [in Polish].
- Rozporządzenie Rady UE nr 834/2007 z 28 czerwca 2007 r. w sprawie produkcji ekologicznej i znakowania produktów ekologicznych.** Dz.U. L 189, 20.7.2007, access: 20.10.2022 [in Polish].
- Sadowski A.J., Wojcieszek-Zbierska M., Zmyślona J.** 2021. Economic situation of organic farms in Poland of the background of the European Union. *Probl. Agric. Econ.* 2(367), 101–118. DOI: 10.30858/zer/135653.
- Staniak S.** 2014. Charakterystyka żywności produkowanej w warunkach rolnictwa ekologicznego [Characteristics of food produced in organic farming]. *Pol. J. Agron.* 19, 25–35 [in Polish].
- Ustawa z dnia 23 czerwca 2022 r. o rolnictwie ekologicznym i produkcji ekologicznej.** Dz.U. z 2022 r. poz. 1370 [in Polish].
- Wrzaszcz W.** 2017. Wyniki produkcyjno-ekonomiczne gospodarstw rolnych oddziałujących w różnym zakresie na środowisko przyrodnicze [Farms' production and economic results difference in the environmental pressure]. *Zag. Ekon. Rol.* 351(2), 3–31. DOI: 10.30858/zer/83018 [in Polish].
- Zegar J.S.** 2018. Rolnictwo a rozwój obszarów wiejskich [Agriculture and rural development]. *Wieś Roln.* 2, 31–48. DOI: 10.7366/wir022018/02 [in Polish].
- Zhang Y.** 2017. Social class differences in consumption propensity in contemporary China – from survival-oriented consumption to development-oriented consumption. *J. Chin. Sociol.* 4, 21. DOI: 10.1186/s40711-017-0066-1.
- Żmija D.** 2016. Wpływ wspólnej polityki rolnej Unii Europejskiej na funkcjonowanie małych gospodarstw rolnych. Warszawa: Difin [in Polish].

## ANALIZA FUNKCJONOWANIA GOSPODARSTW EKOLOGICZNYCH W POLSCE W LATACH 2005–2020

**Streszczenie.** Celem pracy jest ocena funkcjonowania gospodarstw ekologicznych w Polsce w latach 2005–2020, ich potencjału produkcyjnego, wielkości produkcji roślinnej i zwierzęcej oraz możliwości rozwoju. W pracy wykorzystano dane statystyczne publikowane przez Inspekcję Jakości Handlowej Artykułów Rolno-Spożywczych (IJHARS) z lat 2005–2021. Do opracowania danych wykorzystano wskaźnik dynamiki. Badaniom poddano również 18 gospodarstw ekologicznych zlokalizowanych w województwie mazowieckim. Materiał źródłowy zebrano metodą wywiadu bezpośredniego w końcu 2020 r. Wyniki opracowano, podając liczbę i procent gospodarstw. W analizowanym okresie, tj. w latach 2005–2020, w rolnictwie ekologicznym w Polsce nastąpiło wiele zmian. Do 2013 r. obserwowano trwały wzrost liczby i powierzchni ekologicznych gospodarstw. Od 2014 do 2020 r. o 30% zmniejszyła się liczba gospodarstw ekologicznych i o 24% powierzchnia upraw ekologicznych. Zanotowano również spadek gospodarstw średnio obszarowych od 5 do 20 ha, natomiast wzrosła liczba gospodarstw większych o powierzchni powyżej 20 ha. Nastąpiły zmiany w strukturze użytkowania ziemi, w znacznym stopniu wycofano się z produkcji ekologicznej łąk i pastwisk, a wzrósł areal uprawy zbóż i pozostałych roślin uprawnych, upraw sadowniczych i jagodowych oraz warzyw gruntowych. Korzystny był w latach 2005–2020 wzrost pogłowia zwierząt gospodarskich, tj. krów mlecznych, owiec, kóz, a zwłaszcza młodego bydła opasowego i kur niosek, natomiast wystąpił znaczny spadek pogłowia tuczników. Przyczyn malejącej liczby gospodarstw ekologicznych i zmniejszającej się powierzchni pod uprawy ekologiczne należy upatrywać głównie w czynnikach o charakterze ekonomicznym, tj. rozproszeniu produkcji, trudności ze sprzedażą produktów ekologicznych, silnej zależności produkcji ekologicznej, zwłaszcza zwierzęcej, od wsparcia publicznego, wysokich kosztów i niskiej opłacalności tej produkcji oraz dochodowości gospodarstw. O przyszłym funkcjonowaniu gospodarstw ekologicznych i rozwoju tego typu rolnictwa będą decydować zarówno czynniki ekonomiczne, jak i organizacyjne: odpowiednie wsparcie produkcji ekologicznej, integracja i współpraca pomiędzy podmiotami w tym sektorze, dobrze zorganizowany rynek oraz dostępność i promocja produktów ekologicznych, co będzie wpływać na wzrost popytu i urynkowienie tej produkcji. Ważne jest, aby gospodarstwa ekologiczne opierały się na równowadze produkcji roślinnej i zwierzęcej; chodzi tu o zwiększenie produkcji mieszanej, aby mogły uzyskiwać zdolność konkurencyjną i wpisywać się w koncepcję zrównoważonego rozwoju.

**Słowa kluczowe:** gospodarstwa ekologiczne, struktura upraw, pogłowie zwierząt, plany rozwojowe.