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SOCIOECONOMIC REASONS FOR DISCONTINUING ORGANIC FARMING: A POLISH CASE STUDY

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ABSTRACT

Aim: This paper attempts to close the research gap on the reasons for discontinuing organic farming in Poland. The goal is to explore the aspects that make Polish farmers cease organic farming and the barriers and factors which condition their re-embarking on the organic path. **Methodology:** This paper relies on data from a survey of 134 Polish farmers who moved away from organic farming. This study was carried out with former farmers who ceased organic farming between 2014 and 2018. It comprised two stages: the first was an interview with a non-random group of 18 farmers who discontinued organic farming. The second stage used a diagnostic survey with an original questionnaire administered to farmers who shifted away from organic production. The survey was conducted in 2021. Initially, 534 questionnaires were sent by mail. As the return rate was low, the procedure was repeated twice. As a result, 134 questionnaires were received back out of 1,569. **Results:** The study found the following to be the key reasons for discontinuation: end of the five-year period of financial support, high production costs, insufficient levels of support, low yields, and un-profitable production. The "committed pragmatic farmers" was the most prevalent of the three types covered by the study. The drivers of their decision to go organic included both economic (financial support and incomes) and environmental aspects. However, the key reasons for ceasing organic farming were of a financial (end of the five-year support period) and institutional (burdensome bureaucracy and inspections) nature. **Conclusions:** Although certain countries witness considerable discontinuation rates, there is a relative scarcity of papers dealing with this issue. Poland is an example of a country which has seen an acceleration in the shift away from organic farming over the recent years, resulting in a drop in the area of organic farmland (by 185,000 ha from 2014 to 2018).

Key words: organic farming, reasons for discontinuing, financial support, institutional environment, barriers to shifting back, Poland

JEL codes: Q01, Q10, Q18

INTRODUCTION

One of the most pressing challenges facing the world today is finding viable solutions to counteract the effects of global environmental degradation. Several sectors must undergo environmentally oriented transformation processes to preserve the sustainability of natural resources for current and future generations. This is especially imperative for sectors that have a direct environmental impact due to the very nature of their operating and production activities. The systems poised to undergo an environmental restructuring in-

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clude food economics, with a particular focus on agriculture, as it plays a special environmental role due to the direct link of agricultural production on ecosystems, food safety, and rural area conditions. Agriculture has long been based on the maximization of economic benefits (profits and income) at the expense of disequilibrium in ecological and social systems. That model was partly stimulated by an agricultural policy that supported the quantitative growth of agricultural production, resulting in agricultural practices becoming increasingly intensive and intensifying environmental degradation.

In order to reduce environmental harm, agriculture must be viewed as a sector which enables the operation of different methods of natural resource management, including not only those based on the primacy of short-term economic efficiency criteria, but also alternative options related to rational usage of natural resources. One of the key arguments for the new model of agriculture, one which enables the operation of farming systems with different goals and characteristics, focuses on the need to restrain the negative environmental impacts of industrial farming [Nicolopoulou-Stamati et al. 2016]. Another important argument looks at the need to increase the role of agriculture as a sector that provides public goods such as environmental well-being, biodiversity, and rural viability. The above testifies to the need for shifting away from an agricultural system based on the productivity paradigm to one committed to economic, environmental, and social balance. An important role in these processes can be played by organic farming, as suggested in the European Green Deal goals – which assume that the share of organic farmland in the European Union will grow to no less than 25% by 2030 [European Commission 2022, Kowalska and Bieniek 2022].

Organic farming embodies environmental, market, and social values [Seufert and Ramankutty 2017]. It is an agricultural production system that adheres most to the principles of a sustainable economy as it combines the most environmentally beneficial practices with high levels of biodiversity, natural resource protection, and high standards of animal welfare [Gomiero 2008, Lynch 2009, Scialabba 2010, Leifeld 2012, Lee et al. 2015, Skinner et al. 2019]. Consumers view it as a source of food that is healthier than that sourced from conventional farming [Smith and Paladino 2010], although the literature is not unanimous about it. Some studies found organic food to have a lower content of nitrates and nitrites [Rutkowska 2001] and a greater content of phenyl compounds [Carbonaro 2002] and pesticides [Tasiopoulou 2007].

Organic production principles and standards have a variety of economic and environmental consequences. The yields of organic farming are 30–50% lower than those of conventional farming, making production less profitable. This is one of the key barriers to organic farming development in the context of the growing competitiveness of different agricultural systems [Maeder et al. 2002, Adanacioglu and Olgun 2021, De Ponti et al. 2012, Ponisio et al. 2015, Seufert et al. 2012, Muça 2022]. Smaller production volumes per unit of land mean that organic farming can be of limited importance globally as one of the alternatives to conventional farming.

Organic farms do not use chemical inputs such as mineral fertilizers or plant protection products and have a lower livestock density, which affects energy consumption levels, making it less than in other agricultural systems. This is especially important in the context of today's energy crisis and the need to make each sector of the economy more energy-efficient. As demonstrated in one study [Gomiero 2011], organic farming uses 10 to 70% less energy per unit of land and 15 to 45% less energy per ton of production than conventional agriculture. Higher energy consumption per production unit was recorded only for organically grown potatoes and apples. A study carried out in Germany [Kustermann and Hülsbergen 2008] found that energy consumption per hectare was much smaller (2.75 times) in organic farms than in conventional ones. Other research projects focused on fodder plants and cereals revealed that organic farms used 50% less energy than their conventional peers [Hoeppner et al. 2006]. As corroborated by various studies, organic farming demonstrates lower energy consumption than the conventional plant production system – especially when it comes to field crops (cereals, legumes, oilseeds, and forage) – on both a per-hectare and per-unit basis. However, the comparison was inconclusive for poultry and fruit farming [Pimentel et al. 2005, Halberg et al. 2008, Alonso and Guzmán 2010, Lynch

et al. 2011]. Different results were obtained in a study into direct energy consumption (fuel, electricity, heat, and other direct energy sources) in organic and conventional farming systems [Redlichová et al. 2021]. It follows from a Czech research project that organic farms use, on average, more direct energy per production unit than conventional ones. Direct energy consumption per EUR 1-worth of production was demonstrated to be 1.7 times greater than in conventional agriculture. However, the study adopted a narrow approach limited to direct energy consumption – which reflects only a part of energy uses related to organic and conventional farming systems.

In recent years, the organic sector has increased in importance in line with the growing demand for environmental public goods and high-quality food. This is reflected in the sector's 15-20% annual growth rate. Between 2004 and 2019, the area of organic farmland worldwide increased from circa 30 million ha to 72.3 million ha, and the total area of organic agricultural land grew by 69% over the last decade [Willer et al. 2021]. In 2019, the global market for organic food was worth EUR 106 billion, with more than half (68%) being shared between three countries: the US (EUR 44.7 billion), Germany (EUR 12 billion), and France (EUR 11.3 billion). Market growth is mostly witnessed in the US, European Union (EU) countries, and China. In EU countries, it was worth EUR 41.4 billion in 2019, with a 39% share in the global market for organic food. Despite the relatively high growth rates recorded in the market for organic food, some countries witnessed a decline in the number of organic farms in certain periods.

LITERATURE REVIEW

While there is a noticeable increase in organic farming in many countries, the phenomenon of reverting to conventional farming persists. For example, in Germany, between 2007 and 2010, every 11th organic farm converted back to conventional farming [Heinze and Vogel 2012]. The average withdrawal rate from organic farming by producers in the EU was 7.3% in 2005 [Llorens Abando and Rohner-Thielen 2007]. The development of organic farming is influenced by the increase in the number of new organic farms and the number of entities opting out of this form of agriculture. Therefore, designing an effective policy to promote organic farming requires understanding the factors driving development and the reasons for abandonment.

The shift away from organic farming is not a commonly addressed problem. One of the major reasons for that is the difficulties in accessing contact details of farms that discontinued organic production – hence, studies mostly focus on existing organic farms rather than on those who cease. The most frequently addressed aspects of existing holdings are the determinants of conversion [Kallas et al. 2010, Sapbamrer and Thammachai 2021], socioeconomic characteristics of farmers [Flaten et al. 2010, Azam and Banumathi 2015], farmers' typology [Darnhofer et al. 2005, Läpple and Van Rensburg 2005], and attitudes towards and motives behind going organic [Cranfield et al., 2010; Sriwichailamphan and Sucharidtham 2014]. In turn, when it comes to farmers who discontinued organic production, studies focus on the reasons for discontinuation [Sierra et al. 2008, Alexopoulos et al. 2010, Ferjani et al. 2010, Koesling et al. 2012, Heinze and Vogel 2017] and emphasize the complexity and diversity of farmers' decisions to shift away from the organic system. As shown in a study by Rigby et al. [Rigby et al. 2001], factors such as age, education, gender, farm size, and membership in producer associations impact how likely a farmer is for re-embark on the organic path. Klonsky and Smith [Klonsky and Smith 2002] found that smaller farms and vegetable producers are more likely to discontinue organic production. Regouin [2002] identified several reasons for moving away from the organic system, including the discontinuation of farming operations, the absence of outlets, insufficient production profitability, and restrictive regulations. A number of studies [Rigby et al. 2001, Ploomi et al. 2006] demonstrated that the decision to discontinue was driven by insufficient levels of subsidies and profitability and by amendments to regulations and requirements [Sierra et al. 2008, Kirner et al. 2006]. According to a comprehensive literature review by Sahm et al. [2013], such decisions are a combined effect of multiple factors, with economic ones being of key importance.

The shift away from organic farming was witnessed

in Poland, too. In the years immediately following the accession to the European Union and the introduction of financial support under the CAP, there was rapid quantitative growth of organic farming. It primarily means that despite an increase in the number of organic farms and in the area of organic farmland, the supply of organic products remained low. In 2004–2019, the share of organic farms covered by support measures in the total number of organic farms fluctuated between 87.1% (2018) and 98.3% (2011 and 2012) [Zieliński 2021]. Over that period, the share of agricultural land supported under the CAP in total area of organic farmland varied in the range of 74.8% (2019) to 95.2% (2010). The growth in the number of organic farms and agricultural land area was particularly sharp between 2004 and 2013. In that period, the growth rates were 619% for the number of organic farms (going up from 3,705 to 26,598) and 710% for the area of organic farmland – from 82,730 ha (0.5% of the total area of agricultural land in Poland) to 669,969 ha (3.7%).

The situation changed in 2014 with the breakdown in the organic farming growth trend; that year marked the first drop in the number of organic farms and in the area of organic farmland. From 2014 to 2019, the net decline in organic farms was between 1,500 and 2,000, totaling 8,000 [IJHARS 2021]. In 2013-2018, the area of organic farmland decreased by 185,000 ha, from 670,000 ha (in 2013) to 485,000 ha. In 2019, following a five-year decline, the area under organic crops grew to reach 509,000 ha, whereas the number of farms dropped to 18,600. The increase in the area of organic farmland with a concurrent drop in the number of farms may be indicative of a restructuring towards a greater average farm size. Of note is the spatial differentiation of the phenomenon of withdrawing from organic farming (Table 1).

Table 1. Number of organic farmers and agricultural area under organic farming in 2013–2019 in voivodeships

Voivodeships	Number of organic farmers			Agricultural area under organic farming		
	2013	2019	Decrease in absolute numbers	2013	2019	Decrease in absolute numbers
Dolnośląskie	1,189	690	499	37,455	28,898	8,557
Kujawsko-Pomorskie	415	387	387	11,152	7,733	3,419
Lubelskie	2,129	1,951	178	40,819	28,829	11,990
Lubuskie	1,422	860	562	54,693	40,835	13,858
Łódzkie	528	509	19	10,342	9,290	1,520
Małopolskie	1,838	721	1,111	17,005	9,747	7,258
Mazowieckie	2,609	2,241	368	63,445	43,490	19,955
Opolskie	88	63	25	3,542	3,271	271
Podkarpackie	1,750	1,040	710	29,506	13,757	15,749
Podlaskie	3,407	2,864	543	63,548	51,642	11,906
Pomorskie	893	525	368	28,721	20,819	7,902
Śląskie	242	129	113	7,220	3,557	3,663
Świętokrzyskie	1,207	637	570	15,123	8,894	6,229
Warmińsko-Mazurskie	4,235	3,239	996	116,199	107,507	8,692
Wielkopolskie	1,006	727	279	41,616	27,734	13,882
Zachodniopomorskie	3,640	2,054	1,586	129,586	101,639	27,947
Poland	26,598	18,637	7,961	669,969	507,637	162,332

Source: [Condition… 2015, A report… 2021].

The largest decreases in organic agricultural land were recorded in the following voivodeships: Zachodniopomorskie, Mazowieckie, Podkarpackie, Wielkopolskie, and Lubuskie. Together, these five voivodeships accounted for 56% (91,000 hectares) of the total decline in organic agricultural land in 2019. The high rate of abandonment of organic farming during the years 2014–2019, indicated by a decrease in the number of farms by 30% and the agricultural land area by 24%, raises a research question about the reasons behind the significant regression of organic farming in Poland.

In the rapid development period of Polish organic farming (2004–2013), it was easy to access organic payments under the Rural Development Program (RDP) upon meeting minimum organic requirements. Also, the amount of support was decoupled from the organic production volume. With extremely beneficial and readily available payments, organic farming embarked on a path of rapid quantitative growth. That system also contributed to some adverse developments, such as hundreds of hectares of non-producing walnut orchards and permanent pasture which served no actual purpose [NIK 2019]. The pre-2013 conditions for support are a testament to the inefficiency of then-applicable mechanisms stimulating the development of organic farming, in a context of some farmers failing to duly comply with organic production standards and making insufficient use of the potential for increasing the supply of organic products in the market [Golinowska 2013]. The deficiencies of the agricultural policy implemented at that time to stimulate the development of organic farming are also reflected by low production volumes, insufficient supply, and permanently high price levels despite the sharp increase in the area of organic farmland.

The regression period 2014–2020 witnessed the introduction of changes to the criteria for supporting organic farming under the RDP. The primary purpose of these amendments was to increase the supply of products and to couple the cultivation of organic fodder plants on arable land and permanent pastures with animal production. From 2015, no less than 30% of harvested organic agricultural crops, vegetables, herbs, and fruits had to be processed, sold or delivered to other farms. As regards forage crops cultivated on arable land and permanent pasture, a requirement was introduced that all harvests be fed to animals or be delivered for sale or to other farms, and the minimum livestock density was initially set at 0.3 LU/ha of agricultural land (0.5 LU/ha of agricultural land from 2019). Polish organic farming demonstrates low production volumes (Table 2), with a prevailing share of cereals for grain production (41%), and a small amount of rye and winter cereals and mixtures of oats and spring cereals.

Table 2. Structure of organic crop production in Poland in 2019

Specification	Tons	%
Cereals for the production of grain	271,901	41.0
Mixtures of rye and winter cereals	103,480	15.6
Mixtures of oats and spring cereals	62,652	9.4
Dried leguminous plants and protein crops for the production of cereals	25,567	3.9
Grain maize yield and mixture of corn cobs	17,031	2.6
Root crops	17,069	2.6
Barley	5,428	0.8
Fresh vegetables	70,398	10.6
Strawberries	7,443	1.1
Temperate climate fruits	82,460	12.4
Total	663,708	100.0

Source: own study based on Eurostat 2023

Previous instruments used in stimulating the growth of organic production proved to be inefficient and failed to trigger the expected supply effect, which is one of the key problems facing the Polish market for organic food [Hermaniuk 2016, Górska-Warsewicz 2021]. In Poland, organic food accounts for a small percentage of total food sales. In 2019, the estimated value of the market for organic food was EUR 31 million (i.e., 0.5% of the total food market), making Poland the world's 19th-largest organic food market. In the last few years, it has grown at a two-digit rate between 10% and 20%, reaching as high as 30% in 2020. Nearly every fifth Polish resident (23%) buys organic food but spends a small amount (around EUR 8 per year) on it [Rynek żywności 2019]. The insufficient supply of processed domestic products is an intrinsic characteristic of the Polish market [Kociszewski 2014, Smoluk-Sikorska 2021]. The growing demand side of the market is not enough to stimulate domestic organic production, especially processed products. The shortages in the organic supply chain are the consequence of multiple socioeconomic and technical barriers, the identification of which has so far only been addressed in a few studies [Kołoszko-Chomentowska and Stalgiene 2019, Łuczka and Kalinowski 2020, Drygas et al. 2019]. Their authors pointed out key obstacles such as overly burdensome bureaucratic procedures which condition the grant and maintenance of organic production certificates and a strong instability of eligibility requirements for organic payments. The studies also indicate the institutional barriers to the development of organic farming in Poland, attributable to the Ministry of Agriculture and its agencies.

Despite some adverse developments witnessed over the last years in Polish organic farming (i.e., the decline in the number of farms and the area of agricultural land), the market for organic food is expected to grow steadily at an annual rate of up to 20% by 2030. It will be driven by a growing consumption of organic food and the improved availability of organic products [MRiRW 2021]. In that period, the potential of Polish organic farming is expected to be used with a focus on the domestic market to trigger a stronger-than-ever supply effect. It means the need to reverse the unfavorable developments that have occurred over the recent years, namely the decline in the area of organic farmland and the number of farms. It is, therefore, important to investigate why farmers discontinue organic farming and the factors that make them re-embark on the organic path. The research gap in this field was the reason to continue the study to answer the following questions:

1. What are the socio-demographic characteristics of farmers who shifted away from organic farming?
2. What are the main reasons for discontinuing organic farming?
3. What factors play a positive/negative role in their future re-embarking on the organic path?

Answering these questions has both a cognitive and a practical dimension as it may provide an important source of information for strengthening the internal and external factors having a restrictive effect on the shift away from organic farming. This is Poland's first research project undertaken to explore the discontinuation of organic farming among three types of operators: "committed", "pragmatic", and "committed pragmatic" farmers.

MATERIALS AND METHODS

This study was carried out with former farmers who ceased organic farming between 2014 and 2018. It comprised two stages. The first was an interview with a non-random group of 18 farmers who had discontinued organic farming (selected from a contact list kept by the General Inspectorate of Agri-Food Trade Quality). The purpose of the interviews was to preliminarily explore the motives behind the decision to convert to organic farming and to convert back from it, as well as the barriers to re-embarking on the organic path. The information collected this way provided an initial basis for preparing the actual survey. The second stage used a diagnostic survey with an original questionnaire administered to farmers who had shifted away from organic production.

The survey was conducted in 2021. Initially, 534 questionnaires were sent by mail. As the return rate was low, the procedure was repeated twice. Consequently, 134 questionnaires were received back out of the total of 1,569. Access to contact details of farms who had discontinued certified organic production was granted by the General Inspectorate of Agri-Food

Trade Quality for the duration of this study. The recipients of survey questionnaires were farms compliant with the requirements of the relevant regulation [Regulation EU 2018]. The questionnaires were sent to farms located in all voivodeships (as per their spatial distribution over the Polish territory).

The questionnaire was composed of 23 questions divided into two groups. The first one included the basic characteristics of farms (gender, age, education, farm size, farming experience, and farming type) and addressed the farmers' socio-demographic profile. The second consisted of questions about the motives for going organic, the relationships with the market and sales aspects, the reasons for discontinuing organic production, and the factors encouraging the farmers to re-embark on the organic path. Some questions were open and allowed the interviewees to extend and comment on certain answers.

The survey questionnaire identified three types of organic farmers based on the prevailing motives and goals of going organic. Identifying organic farmer types was partly based on the division used by Fairweather [1999] and Darnhofer et al. [2005]. Fairweather [1999] identified five types: "committed conventional" farmers, "pragmatic conventional" farmers, "environment-conscious but not organic" farmers, "pragmatic organic" farmers, and "committed organic" farmers. The farmers' preferences and goals, impact on farming methods, and strategies and values were the criteria used in defining the types listed above. The same typology was employed in Darnhofer et al. [2005].

This survey identified three types of organic farmers: "committed" (1), "pragmatic" (2), and "pragmatic committed" (3). An explanation of the criteria used in identifying the types could be found in the questionnaire. According to the assumptions, the "committed" (ideological) type means farmers who prioritize environmental, ethical and health values and standards in their decision-making process. Type I is remarkably environmentally aware and follows a unique environmental ideology. The "pragmatic" type of farmer, in contrast to the "committed" type, consists of those who prioritize economic benefits such as profitability, cost management, and price premiums. They focus on maximizing their income and revenue when choosing their farming methods. On the other hand, the third type, known as "pragmatic committed", is a blend of both previously mentioned types. These farmers don't have a dominant motive in their decision-making process. Instead, they simultaneously pursue both environmental and economic goals, shaping their farming methods to harmonize with both of these objectives.

Based on the presented descriptions, the survey asked the farmers to associate themselves to one of the three farm types. In this study, the largest share of farmers (56%) declared to be "pragmatic committed", 26% viewed themselves as "pragmatic", whereas "committed" had the smallest share of 18%.

Men accounted for more than half (57%) of the interviewees (Table 3). The share of men was particularly high (75%) in the "pragmatic" type. The average age of the interviewees was nearly 55 years. A large part (47%) of the "committed" type were people close to retirement age (aged over 60), which – in Poland – is 60 years for women and 65 years for men. The demographic structure of the respondents can significantly impact the distribution of answers to many questions asked in the survey. 47.6% and 31% of the interviewees had a tertiary and a secondary education, respectively. These figures can be considered high – especially the tertiary education rate. The greatest share (57%) was represented by farmers with a relatively short record of organic farming (up to five years, which coincided with the period of accessing financial support under the RDP). Ranked second were farmers with a track record of 6 to 10 years (31%); those with a 16-year or longer history ranked at the bottom (12%). The oldest farm was established in 1980. The average area of farms surveyed was 19 ha, which is 9 ha less than the average size of organic farms in Poland (28 ha) and 8 ha more than the average size of all farms.

Over half of farmers surveyed (57%) switched to conventional methods after discontinuing organic farming. It is, therefore, reasonable to believe that their decisions could be impacted by a cost-and-benefit analysis of choosing an alternative agricultural system in the context of evolving farming conditions. For some of the farmers covered by this study, the analysis indicated that superior benefits can be derived from conventional farming.

Table 3. Selected characteristics of farmers covered by the study

Specification	Characteristics	Share (%)	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
Gender	Women	42.6	38.9	24.0	50.9
	Men	57.4	61.1	76.0	49.1
Age	< 30	3.0	–	4.1	3.8
	31–40	9.1	5.9	12.5	9.4
	41–50	25.3	17.6	25.0	30.2
	51–60	29.3	29.4	29.2	32.1
	>60	33.3	47.1	29.2	24.5
Education	Primary/junior high	3.9	5.6	8.0	1.8
	Basic vocational	17.5	22.2	28.0	9.3
	Secondary	31.0	38.9	20.0	33.3
	Tertiary	47.6	33.3	44.0	55.6
Area of the farm (ha)	< 5	11.8	11.1	8.0	13.2
	5.01–10	22.5	27.8	20.0	18.9
	10.01–25	34.3	27.8	32.0	30.2
	>25	31.4	33.3	40.0	37.7

Source: own study based on survey data.

RESULTS

The results of this study suggest that different aspects guided farmers in making their decisions to go organic. The interviewees were asked to indicate the key motives behind switching to organic farming and could add individual causes not specified in the survey. The questionnaire included both economic and non-economic motives. The former includes financial support for organic farming, profitability, production costs, and price premiums – whereas the latter comprise environmental protection, interest in organic farming, family health, and environmentally friendly production processes.

The study found high levels of support (42%) and environmental protection (38%) to be the respondents' key reasons for going organic. Note, however, that generous support was important only to farmers classed as "pragmatic" and "committed pragmatic" (indicated by 72% and 52% of interviewees, respectively). "Pragmatic" farmers also attached great importance to low production costs (indicated by 52%). The "committed" type declared family health (42%) and environmental protection (33%) as the key motives. Conversely, they found economic reasons (such as high support for organic farms, low production costs and owned resources of land and labor) to be irrelevant.

The top two reasons for discontinuing organic farming (indicated by the same percentage of respondents) are the end of the five-year support program (42.3%) and burdensome bureaucracy and inspections (42.3%) (Table 5). Other prominent causes are insufficient support (33%), low yields (30%), and low production profitability (28%). The distribution of replies relating to the causes for the discontinuation varied in the function of farmer types identified in the study. In the "pragmatic" group, the largest share of respondents (60%) indicated the end of the five-year support

Table 4. Key motives behind going organic

Specification	Total	Type Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
High support for organic farms	44.2	–	72.0	51.9
Environmental protection	38.1	33.3	28.6	45.2
Interest in organic farming	34.1	16.7	18.2	47.8
Family health	31.7	41.7	28.6	32.3
Low production costs	30.8	–	52.0	33.3
Environmentally friendly production processes	27.0	8.3	28.6	35.5
Green lifestyle and philosophy	22.1	11.1	8.0	35.2
Land and labor resources	17.1	–	18.2	21.7
Concern for animal welfare	15.9	25.0	7.1	16.1
High price premiums for organic food	14.4	5.6	24.0	13.0

Source: own study based on survey data.

program and low production profitability (52%). For the "pragmatic committed" type, the top two reasons were burdensome bureaucracy and inspections (50%) and the end of the support program (48%). In turn, the "committed" farmers found the key motive to be bureaucratic regulations and inspections (28%).

Many farmers found the increase in payment rates under the 2014–2020 RDP insufficient to operate an organic farm in the context of growing requirements. This is corroborated by the distribution of the respondents' replies on how they view the organic farming support system (Table 6). The vast majority of farmers agreed that the amount of payments was small, both generally (41%) and with respect to certain crops (48%) (Table 5). Conversely, they differed in their opinions on organic requirements and standards, ranging from "excessive" (48%) to "adequate" (48%). Most interviewees (58%) had a negative view of livestock density requirements and found them useless. This can suggest they lack sufficient understanding of the organic farming concept, which is largely underpinned by sustainable management of feed and

Table 5. Main reasons for discontinuing organic farming

Specification	Total	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
End of the five-year support program	42.3	11.1	60.0	48.1
Burdensome bureaucracy and inspections	42.3	27.8	44.0	50.0
Insufficient financial support	32.7	22.2	40.0	35.2
Low yields	29.8	11.1	40.0	35.2
Low production profitability	27.9	5.6	52.0	27.8
Frequent amendments to organic regulations	18.3	5.6	20.0	22.2
Low price premiums for organic products	17.3	5.6	8.0	27.8

Source: own study based on survey data.

fertilizers. Nearly half of the farmers surveyed believe the support-related administrative procedures to be overly complicated and time-consuming (46%).

The farmers surveyed had a limited connection to the market. While most of them declared to sell organic products (67%), the share of organic sales in their total sales was extremely small – the greatest part (38.6%) of interviewees indicated a minimum level (i.e., up to 20% (Table 7)). However, two types of farmers ("pragmatic committed" and "pragmatic") reported a high share of 43 and 46%, respectively. It means that nearly half of the respondents recorded a very small percentage of revenue from organic sales. The "committed" type was more advantageous, with every third farmer (the highest share) falling in the bracket of 81 to 100%.

The study asked the farmers about the reasons for the insufficient sales of organic products, assuming

Table 6. Opinions on the organic farming support system under the RDP

Specification		
Evaluation criteria (in %)		
Organic requirements and standards		
Excessive 48.1	Adequate 48.1	Insufficient 3.8
Payment level		
Adequate 11.1	Insufficient for some crops 47.8	Generally insufficient 41.1
Support-related administrative procedures		
Too complicated and time-consuming 45.7	Needed yet time-consuming 40.2	Do not pose a problem 14.1
Livestock density condition		
Needed 26.3	Needed yet excessive 15.8	Useless 57.9

Source: own study based on survey data.

Table 7. Share of revenue from organic sales in total sales

Specification	Total	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
0–20%	38.6	25.0	42.9	45.7
21–40%	21.5	8.3	28.6	22.9
41–60%	9.2	16.7	7.1	5.7
61–80%	9.2	16.7	7.1	5.7
81–100%	21.5	33.3	14.3	20.0

Source: own study based on survey data

that it could impact their decision to discontinue organic farming. In the long run, insufficient supply can undermine the economic purposefulness of operating an organic farm. Nearly half of the farmers surveyed (41%) declared producing for their own needs as the cause of supply deficiencies (Table 8). Other reasons were the small production scale (20%) and marketing problems (12%). Production for their own needs was identified as the cause of insufficient supply by two farmer types: "pragmatic" and "committed" (the greatest share of 47% was recorded in the "pragmatic" group).

One of the goals of this study was to explore the factors which condition the farmers' re-embarking on the organic path. The survey confirmed that the financial aspect (in the form of support) was of greatest importance (Table 8). Nearly every third interviewee (29%) indicated higher financial support as a factor that conditions their switch back to organic farming. It was of major importance to "pragmatic" farmers (30%) and smaller importance to the "committed" group (25%). The second important factor in shifting back to organic farming is the development of local outlets (22%). They play a crucial role in short supply chains in which producers have a greater share in the margin and in the final price of products offered. Moreover, the development of local markets contributes to reducing food miles, which is advantageous to the environment and is particularly valued by highly environmentally aware farmers [Kawęcka and Gebarowski 2015, Łuczka 2021, Wojciechowska-Solis 2022].

Many farmers covered by this study do not see any opportunity for switching back to organic farming. The top three barriers they identified are the difficulties related to the administrative burden (28%), insufficient financial support (23%), and great volatility of organic farming regulations (20%) (Table 10). Low

Table 8. Reasons for the insufficient supply of organic products to the market

Specification	Total	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
Producing only to address the farmers' own needs	41.1	44.5	46.6	37.5
Small production scale	19.6	22.2	13.3	25.0
Problems in selling the products	11.8	11.3	6.7	12.5
The farmers never considered marketing their products	9.8	11.1	20.0	4.2
Lack of demand in the local market	5.9	11.1	6.7	4.2
Other	11.8	–	6.7	16.6

Source: own study based on survey data.

Table 9. Factors encouraging the farmers to re-embark of the organic path

Specification	Total	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
Greater financial support	28.7	25.0	30.4	29.7
Development of local outlets for organic products	22.1	25.0	17.4	23.0
Increase in demand for organic products	16.4	20.0	13.1	14.9
Increase in organic food prices	15.6	15.0	21.7	13.5
Reduction of bureaucratic procedures	9.0	10.0	4.3	10.8
Other	8.2	5.0	13.1	8.1

Source: own study based on survey data.

Table 10. Barriers to switching back to organic farming

Specification	Total	Committed (Type 1)	Pragmatic (Type 2)	Pragmatic committed (Type 3)
Difficulties related to the administrative burden	27.7	36.4	25.0	28.0
Insufficient financial support for organic farming	23.1	18.2	25.0	24.0
Great volatility of organic farming regulations	20.0	18.2	16.7	24.0
Low profitability of organic production	13.8	13.2	14.5	15.0
Narrow development prospects for the farm	7.7	–	8.3	8.0
Development of conventional farming	6.2	9.0	8.3	4.0
Transferring the farm	1.5	–	4.2	–

Source: own study based on survey data.

levels of organic farming support and a heavy bureaucratic burden are the two answers given as both a reason for discontinuing organic farming and a barrier to switching back. It means that the interviewees attach great importance to institutional conditions for developing Polish organic farming. Many farmers surveyed have a negative opinion on the level of payments and expect it to grow.

DISCUSSION

In this survey, there was a difference in age and farm size between the interviewees and the total population of Polish organic farmers. According to some studies, these characteristics can play an important role for farms that discontinued organic farming [Rigby et al., 2001; Gambelli and Bruschi, 2010]. In this study, the average age of the farmers was 55 years, seven years above the average for the general population of organic farmers. The survey does not corroborate the thesis that older farmers are less inclined to discontinue organic farming.

The holdings covered by this survey were 9 ha smaller than the average area of Polish organic farms. This is consistent with Ferjani et al. [2010], which suggests that farmers who shifted away from organic production operated on a smaller area than the average size of organic farms. It can be explained by smaller farms being less profitable than larger holdings. The increase in organic requirements under the 2014–2020 RDP, especially with respect to livestock density, affected the costs of small farms and made their profitability more likely to drop to a level unacceptable to some farmers. In these circumstances, discontinuing the farming business could have been a reasonable thing to do – especially in the case of small farms without animals. The above is corroborated in a study by Ziętara and Mirkowski [2021], who claim that the decline in the number of organic farms and in the area of organic farmland in Poland was caused by high requirements for animal husbandry and related organizational difficulties – in particular, in farms with a smaller production potential whose users often have an additional off-farm job.

For the respondents, high levels of support and environmental protection were the key reasons for going organic. From the perspective of motives that guided their choices, the farmers formed a heterogeneous group, as also confirmed by other studies [Läpple 2013, Flaten et al. 2006]. While the financial motive was important to the "pragmatic" and "pragmatic committed" types, it was of no relevance at all to the "committed" group. This study suggests that the farmers' pragmatism, manifested in their being guided by financial considerations, can make them more willing to discontinue organic farming in the case of a deterioration in access to payments or a decline in profitability. This is consistent with the findings of many authors [Flaten et al. 2010, Rigby et al. 2001, Plomi et al. 2006, Kaltoft and Risgaard 2006], who identified small financial benefits as one of the key reasons why farmers switch back to the conventional system.

The outcomes of this study suggest that the farmers believe the reasons for shifting away from organic farming to be mostly related to external factors. It is confirmed by the distribution of replies to the question on the reasons for discontinuing organic production and on how the respondents view the organic farming support system. Of the reasons for ceasing, particular attention is given to the institutional environment and its underlying support system, administrative procedures, and regulations. The study confirmed the assertion that the decline in the area of organic farmland in Poland was related to the farmers being primarily focused on financial support during the applicability of low environmental requirements [Brodzińska 2017, Jezierska-Thöle and Biczkowski 2017, Zuba-Ciszewska et al. 2019, Łuczka et al. 2021]. Support was easily available under the 2004–2007 and the 2007–2013 RDPs, which encouraged farmers seeking short-term goals to undertake an organic commitment. It corroborates the opinion that financial support has a substantial impact on the decisions of Polish farmers regarding both the conversion to and the shift away from organic farming [Luty 2016, Drabarczyk and Wrzesińska-Kowal 2015, Komorowska 2015]. The farmers' support-seeking attitude resulted in a passive consumption of subsidies, which did not create conditions for stimulating the endogenous development of organic farms and strengthening their long-term sustainability framework. The dynamic quantitative growth of organic farming was short-lived because it only coincided with the period of easily attainable environmental requirements for many farmers. In that case, the decisions of support-seeking farmers are a mere consequence of the support policy [Brodzińska 2014]. Some studies suggest that changes in that policy affect the farmers' decision to continue or cease organic farming [Nieberg and Kuhnert 2007].

This is corroborated by the Polish experience related to the development policy for organic farming. It was amended in 2014 with new requirements, especially the need to market a part of harvests to trigger a supply effect and to ensure a minimum level of livestock density in farms cultivating fodder plants on arable land and permanent pasture. The new regulations forced farmers to rethink their choices because many of them, particularly the "pragmatic" group, believed that the organic payment rates were insufficient to run an organic farm in the face of the new regulations. In their subjective view, the marginal costs caused by new requirements were greater than the marginal benefits derived from increased organic payments. This study shows that the farmer community were unanimous in how they saw support for organic farming. According to nearly half of farmers, the rates of organic payments are insufficient, the administrative procedures are overly complicated and time-consuming, and the livestock density requirement is useless. In turn, they were more moderate in assessing the organic requirements and standards, with equal numbers of interviewees finding them to be excessive and adequate. Although the farmers consider the levels of support to be low, it is not reflected in official statistical data – which suggests that organic payments have a large share in the incomes of Polish organic farms (as they account for 80% of incomes derived from agricultural production) [Orłowska 2019, Gołaś 2016].

This study confirmed that organic farms faced the problems of insufficient sales and market connections. Nearly half of farmers, especially the "pragmatic committed" and "pragmatic" groups, recorded a minimum sales volume, contributing up to 20% to total incomes. Other studies also discovered the small amount of marketable organic production, indicating a large percentage of non-commercial holdings and farms which marketed no more than 20% of their produce [Nowogródzka et al. 2013]. The small volume of sales results in an unbalanced market that fails to meet domestic organic food demand [Bryła 2016]. Despite having a quantitative growth trend, organic farming only produces tiny quantities of goods, while the market for organic food expands as a result of goods being imported from Germany, the Czech Republic, Denmark, and many other nations. Considering its potential, the level of consumer environmental and health awareness, and the rising income of the people, the sector's development chances are not being fully utilized because organic food makes up just about 2 to 3 percent of agricultural production.

Financial support for organic farms is strictly related to administrative procedures, which are extensively formalized and time-consuming while generating additional costs and, therefore, can have an adverse

effect on the development of organic farming. As demonstrated in several studies, excessive formalization of the conditions for organic farm certification and inspection, together with frequent amendments to regulations, contributes to farmers discontinuing organic production [Flaten et al. 2021, Kaltoft and Risgaard 2006]. This study confirmed that farmers' negative views of administrative procedures for farm certification and inspection can affect their shift away from organic farming and may also pose a barrier to returning. These reasons were particularly important to farmers classed as "pragmatic" and "committed pragmatic".

In the future, the situation of organic farming could be considerably improved by the implementation of the new strategic plan supporting the goals of the Common Agricultural Policy under the European Green Deal. It simplifies the certification and inspection procedures (especially for small farms) and increases the level of subsidies to organic crops in Poland by 30% (on average), which can encourage farmers to go organic. From 2022, small farms can apply for a group certification procedure and may choose a flat-rate organic payment. Note, however, that to ensure sustainable development of organic farming, it is important not only to drive an increase in the area of land under crops, but also to promote improvements in the farms' economic condition, support the demand side of the market, and build consumer trust. These measures will enhance the farms' market potential through investments in the processing sector and by shortening the supply chain while also making greater efforts to increase consumer awareness and enhance farmers' and consultants' knowledge.

IMPLICATIONS FOR AGRICULTURAL POLICY

Our research reveals that a considerable number of Polish farmers quit operating organic farms, with the figure exceeding 8,000 between 2014 and 2019, as a result of agriculture policy's volatility in carrying out its stated objectives. Therefore, we believe that the reversal of regressive processes and the reduction of resignation from organic farming is conditioned by improving the efficiency of the organic farming development policy in Poland. The experience gained so far proves the high variability of the institutional environment in which organic farms functioned. The quality of the conditions shaped by agricultural policy is crucial for the future of organic farming due to the important role of public support in stimulating its development. Empirical research shows that for Polish farmers, ecological subsidies as compensation for lost benefits related to the choice of an ecological farming system are one of the most important factors shaping their profitability. These subsidies are significant for organic farms involved in open-field production and mixed-plant animal production. Without subsidies, these farms can only generate a small income compared to conventional farms [Zieliński 2022], meaning that these farms are fully dependent on state aid. For this reason, this support is crucial for most organic farms, and the rules governing granting such aid, including the conditions for granting it as such, should be as stable as possible. Future rules changes should be announced appropriately in advance, enabling farmers to estimate future costs of adaptation to new conditions of agricultural activity. Otherwise, institutional risk increases due to the uncertainty of changes in state policy and regulations. This is confirmed by our research, which indicates that farmers identified the instability of regulations and administrative procedures as one of the main reasons for abandoning organic farming.

Attaining the subsequent stages of development for organic farming set by the European Green Deal is a challenge for agricultural policy. The implementation of the goal set for Polish organic farming to achieve at least 7% of the total agricultural land area by 2030 requires improvement of the current agricultural policy – not only increasing its stability and efficiency in achieving the goal, but also reducing regulatory and administrative barriers to running organic farms.

CONCLUSIONS

Understanding why farmers resign from organic schemes could be a major source of information for decision-makers in further improving organic farming development policy. This can empower them to make more efficient decisions that stimulate the institutional environment to generate favorable conditions for the sustainable development of organic farming. Future policies designed to promote organic farming

are recommended to include a support mechanism that reduces regulatory barriers and is committed to both environmental and market-driven objectives.

The authors of this paper realize certain limitations present in the research procedure utilized. One of the ways to enhance the scope of investigations into future studies is by exploring whether current organic farmers intend to continue or shift away from operating a certified farm.

To better understand the dynamics of organic farming development, it is also necessary to explore in detail the connections between organic agricultural producers and their institutional environment. Furthermore, it would be advisable to conduct a qualitative investigation into the reasons for shifting away from organic farming with subject matter experts, particularly with the representatives of agricultural consultancy centers, agricultural chambers, industry unions and associations, and local governments. This would provide an opportunity to increase awareness and knowledge of the topic, which continues to be insufficient.

REFERENCES

A report on organic farming in Poland in 2019–2020 (2021). Agricultural and Food Quality Inspection.

Adanacioglu, H., Olgun, A.(2021). Evaluation of the Efficiency of Organic Cotton Farmers: A Case Study from Turkey. Bulgarian Journal of Agricultural Science, 18, 418–428.

Alexopoulos, G., Koutsouris, A., Tzouramani, I. (2010). Should I stay or should I go? Factors affecting 'farmers' decision to convert to organic farming as well as to abandon it. In Building Sustainable Rural Futures: The Added Value of Systems Approaches in Times of Change and Uncertainty, Proceedings of the 9th European IFSA Symposium, Vienna, Austria, 1083–1093. Retrieved from http://ifsa.boku.ac.at/cms/fileadmin/Proceeding2010/2010_WS2.3_Alexopouos.pdf [accessed: 21.05.2023].

Alonso, A.M., Guzmán, G.J. (2020). Comparison of the Efficiency and Use of Energy in Organic and Conventional Farming in Spanish Agricultural Systems. Journal of Sustainable Agriculture, 34, 312–338. https://doi.org/10.1080/10440041003613362

Azam, M.S., Banumathi, M. (2015). The Role of Demographic Factors in Adopting Organic Farming: A Logistic Model Approach. International Journal of Advanced Research, 3, 713–720.

Brodzińska, K. (2014). Organic Farming – Trends and Directions of Changes. Problemy Rolnictwa Światowego, 14(29), 27–36.

Brodzińska, K. (2017). Support System for Organic Farming and Agricultural Producer Groups – Assumptions and Practical Implications. Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu, 19, 48–53. https://doi.org/10.5604/01.3001.0010.6202

Bryła, P. (2016). Organic Food Consumption in Poland: Motives and Barriers. Appetite, 105, 737–746. https://doi.org/ 10.1016/j.appet.2016.07.012

Carbonaro, M., Mattera, M., Nicoli, S., Bergamo, P., Cappelloni, M. (2002). Modulation of Antioxidant Compounds in Organic vs Conventional Fruit (Peach, Prunus persica L., and Pear, Pyrus communis L.). Journal of Agricultural and Food Chemistry, 50, 5458–5462. https://doi.org/10.1021/jf0202584

Condition of organic farming in Poland. A report 2013–2014 (2015). Agricultural and Food Quality Inspection.

Cranfield, J., Henson, S., Holiday, J. (2010). The Motives, Benefits, and Problems of Conversion to Organic Production. Agriculture and Human Values, 27, 291–306. https://doi.org/10.1007/s10460-009-9222-9

Darnhofer, I., Schneeberger, W., Freyer, B. (2005). Converting or Not Converting to Organic Farming in Austria: Farmer Types and Their Rationale. Agriculture and Human Values, 22, 39–52. https://doi.org/10.1007/s10460-004-7229-9

De Ponti, T, Rijk, B., Van Ittersum, M.K. (2012). The Crop Yield Gap between Organic and Conventional Agriculture. Agricultural Systems, 108, 1–9. https://doi.org/10.1016/j.agsy.2011.12.004

Drabarczyk, K., Wrzesińska-Kowal, J. (2015). The Development of Organic Farming in Poland. Ekonomika i Organizacja Gospodarki Żywnościowej, 111, 19–31. https://doi.org/10.22630/EIOGZ.2015.111.31

Drygas, M., Nurzyńska, I., Bańkowska, K. (2019). Charakterystyka i uwarunkowania rozwoju rolnictwa ekologicznego w Polsce. Szanse i bariery (Characteristics of and Conditions for the Development of Organic Farming in Poland. Opportunities and Barriers). Wydawnictwo Naukowe Scholar, Instytut Rozwoju Wsi i Rolnictwa PAN, Warszawa.

European Commission (2022). Europejski Zielony Ład [European Green Deal]. Retrieved from: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_pl [accessed: 27.11.2022].

Eurostat (2023). Organic Crop Area by Agricultural Production Methods and Crops (from 2012 onwards). Retrieved from: https://ec.europa.eu/eurostat/databrowser/view/org_cropar/default/table?langen [accessed 21.05.2023].

Fairweather, J.R. (1999). Understanding how Farmers Choose between Organic and Conventional Production: Results from New Zealand and Policy Implications. Agriculture and Human Values, 16, 51–63. https://doi.org/10.1023/A:1007522819471

Ferjani, A., Reissig, L., Mann S. (2010). Biolandbau in der Schweiz – wer steigt aus, wer steigt ein? (Organic Farming in Switzerland: Opting in and Opting out). Agrarforsch. Schweiz, 1, 142–147.

Flaten, O., Lien, G., Ebbesvik, M., Koesling, M., Valle, P.S. (2006). Do the New Organic Producers Differ from the 'Old Guard'? Empirical Results from Norwegian Dairy Farming. Renewable Agriculture and Food Systems, 21, 174–182. https://doi.org/10.1079/RAF2005140

Flaten, O., Lien, G., Koesling, M., Lřes, A.-K. (2010). Norwegian Farmers Ceasing Certified Organic Production: Characteristics and Reasons. Journal of Environmental Management, 91, 2717–2726. https://doi.org/10.1016/j.jenvman.2010.07.026

Gambelli, D., Bruschi, V. (2010). Bayesian Network to Predict the Probability of Organic Farms' Exit from the Sector: A Case Study from Marche, Italy. Computers and Electronics in Agriculture, 71, 22–31. https://doi.org/10.1016/j.compag.2009.11.004

Golinowska, M. (2013). Rozwój rolnictwa ekologicznego [Development of Organic Farming]. Uniwersytet Przyrodniczy we Wrocławiu, Wrocław. Retrieved from: https://www.dbc.wroc.pl/Content/23683/PDF/240_Golinowska_M_Rozwoj%20roln%20ekolog_DBC.pdf [accessed: 27.11.2022].

Gołaś, Z. (2016). Development of Organic Farming in Poland. Journal of Agribusiness and Rural Development, 4(42), 533–543. https://doi.org/10.17306/JARD.2016.80

Gomiero, T., Paoletti, M.G., Pimentel, D. (2008). Energy and Environmental Issues in Organic and Conventional Agriculture. CRC Critical Reviews in Plant Sciences, 27, 239–254. https://doi.org/10.1080/07352680802225456

Gomiero, T., Pimentel, D., Paoletti, M.G. (2011). Environmental Impact of Different Agricultural Management Practices: Conventional vs. Organic Agriculture. CRC Critical Reviews in Plant Sciences, 30, 95–124. https://doi.org/10.1080/07352689.2011.554355

Górska-Warsewicz, H., Żakowska-Biemans, S., Stangierska, D., Świątkowska, M., Bobola, A., Szlachciuk, J., Czeczotko, M., Krajewski, K., Świstak, E. (2021). Factors Limiting the Development of the Organic Food Sector – Perspective of Processors, Distributors, and Retailers. Agriculture, 11, 882. https://doi.org/10.3390/agriculture11090882

Halberg, N., Dalgaard, R., Olesen, J.E., Dalgaard, T. (2008). Energy Self-Reliance, Net-Energy Production and GHG Emissions in Danish Organic Cash Crop Farms. Renewable Agriculture and Food Systems, 23, 30–37. https://doi.org/10.1017/S1742170507002037

Heinze, S., Vogel, A. (2012). Determinants for the adoption and abandonment of organic farming Germany. Berichte Uber Landwirtschaft, 90(3), 467–489.

Heinze, S., Vogel, A. (2017). Reversion from Organic to Conventional Agriculture in Germany: An Event History Analysis. German Journal of Agricultural Economics, 66, 13–25. https://doi.org/10.22004/ag.econ.303529

Hermaniuk, T. (2016). Organic Food Market in Poland – Main Characteristics and Factors of Development. Scientific Annals of Economics and Business, 63, 135–147. https://doi.org/10.1515/saeb-2016-0111

Hoeppner, J.W., Entz, M.H., McConkey, B., Zentner, R.P., Nagy, C.N. (2006). Energy Use and Efficiency in Two Canadian Organic and Conventional Crop Production Systems. Renewable Agriculture and Food Systems, 21, 60–67. https://doi.org/10.1079/RAF2005118

IJHARS (2021). Raport o stanie rolnictwa ekologicznego w Polsce w latach 2019–2020 (The Report on Organic Farming in Poland in 2019–2000). Główny Inspektorat Jakości Handlowej Artykułów Rolno-Spożywczych, Warszawa. Retrieved from: https://www.gov.pl/web/ijhars [accessed: 22.05.2023].

Jezierska-Thöle, A., Biczkowski, M. (2017). Środki z funduszy Unii Europejskiej jako szansa rozwoju sektora gospodarstw ekologicznych w Polsce (European Union Funds as a Development Opportunity for the Polish Organic Farming Sector). Annals Polish Association of Agricultural Economists and Agribusiness, 19, 96–99. https://doi.org/10.22004/ag.econ.293499

Kallas, Z., Serra, T., Gil, J.M. (2010). Farmers' Objectives as Determinants of Organic Farming Adoption: The Case of Catalonian Vineyard Production. Agricultural Economics, 41, 409–423. https://doi.org/10.1111/j.1574-0862.2010.00454.x

Kaltoft, P., Risgaard, M.L. (2006). Has organic farming modernized itself out of business? Reverting to conventional methods in Denmark. [In:] G.C. Holt, M. Reed (Eds.), Sociological Perspectives of Organic Agriculture: From Pioneer to Policy. CABI Publishing, Oxfordshire, 126–141. https://doi.org/10.1079/9781845930387.01

Kawecka, A., Gębarowski, M. (2015). Short Food Supply Chains – Benefits for Consumers and Food Producers. Journal of Agribusiness and Rural Development, 37, 459–466. https://doi.org/10.17306/JARD.2015.49

Kirner, L., Vogel, S., Schneeberger, W. (2006). Intended and Actual Behavior of Organic Farmers in Austria after a Five-Year Commitment Period. Renewable Agriculture and Food Systems, 21, 95–105. https://doi.org/10.1079/RAF2005132

Klonsky, K., Smith, M.D. (2002). Entry and exit in 'California's organic farming sector. [In:] D.C. Hall, L. Joe Moffitt (Eds.), Economics of Pesticides, Sustainable Food Production and Organic Food Markets. Advances in the Economics of Environmental Resources, Vol. 4. Emerald Group Publishing Limited, Bingley, 139–165. https://doi.org/10.1016/S1569-3740(02)04008-7

Kociszewski, K. (2014). Barriers and Factors Favourable for Functioning of Organic Farms in the Light of Nationwide Questionnaire Survey. Annals Polish Association of Agricultural Economists and Agribusiness, 16, 129–134. https://doi.org/10.22004/ag.econ.201575

Koesling, M., Løes, A.-K., Flaten, O., Kristensen, N.H., Hansen, M.W. (2012). Farmers' Reasons for Deregistering from Organic Farming. Organic Agriculture, 2, 103–116. https://doi.org/10.1007/s13165-012-0030-y

Kołoszko-Chomentowska, Z., Stalgiene, A. (2019). Barriers to the Development of Organic Farming. Annals Polish Association of Agricultural Economists and Agribusiness, 21, 215–222. https://doi.org/10.5604/01.3001.0013.5814

Komorowska, D. (2015). Znaczenie rolnictwa ekologicznego w Polsce (Importance of Organic Farming in Poland). Annals Polish Association of Agricultural Economists and Agribusiness, 17, 119–126.

Kowalska, A., Bieniek, M. (2022). Meeting the European Green Deal Objective of Expanding Organic Farming. Equilibrium, 17, 607–633. https://doi.org/10.24136/eq.2022.021

Kustermann, B., Hülsbergen, K.-J. (2008). Emission of climate-relevant gases in organic and conventional cropping systems. 16th IFOAM Organic World Congress, Modena, Italy, June 16–20. Retrieved from: http://orgprints.org/view/projects/conference.html [accessed: 21.05.2023].

Läpple, D. (2013). Adoption and Abandonment of Organic Farming: An Empirical Investigation of the Irish Drystock Sector. Agricultural Economics, 61, 697–714. https://doi.org/10.1111/j.1477-9552.2010.00260.x

Läpple, D., Van Rensburg, T. (2011). Adoption of Organic Farming: Are There Differences between Early and Late Adoption. Ecological Economics, 70, 1406–1414. https://doi.org/10.1016/j.ecolecon.2011.03.002

Lee, K.S., Choe, Y.C., Park, S.H. (2015). Measuring the Environmental Effects of Organic Farming: A Meta-Analysis of Structural Variables in Empirical Research. Journal of Environmental Management, 162, 263–274. https://doi.org/10.1016/j.jenvman.2015.07.021

Leifeld, J. (2012). How Sustainable Is Organic Farming? Agriculture, Ecosystems & Environment, 150, 121–122. https://doi.org/10.1016/j.agee.2012.01.020

Llorens Abando, L., Rohner-Thielen, E. Different organic farming patterns within EU-25 (2007). An overview of the current situation. Stat Focus, 69, 1–2. Retrieved from: https://op.europa.eu/en/publication-detail/-/publication/71fb9781-5de1-4cf9-9eb3-bd6a7f02ae5f/language-en [accessed: 15.02.2023].

Luty, L. (2016). Rolnictwo ekologiczne – Rozwój w wybranych krajach Unii Europejskiej (Organic Farming – Development of Selected Countries of the European Union). Quantitative Methods in Economics, 17, 65–74.

Lynch, D. (2009). Environmental Impacts of Organic Agriculture: A Canadian Perspective. Canadian Journal of Plant Science, 89, 621–628. https://doi.org/10.4141/CJPS0816

Lynch, D.H., MacRae, R., Martin, R.C. (2011). The Carbon and Global Warming Potential Impacts of Organic Farming: Does It Have a Significant Role in an Energy Constrained World? Sustainability, 3, 322–362. https://doi.org/10.3390/su3020322

Łuczka, W. (2021). Procesy rozwojowe rolnictwa ekologicznego i ich ekonomiczno-społeczne uwarunkowania (Development Processes of Organic Farming and their Socioeconomic Conditions). Wydawnictwo Naukowe Scholar, Warszawa.

Łuczka, W., Kalinowski, S. (2020). Barriers to the Development of Organic Farming: A Polish Case Study. Agriculture, 10, 536. https://doi.org/10.3390/agriculture10110536

Łuczka, W., Kalinowski, S., Shmygol, N. (2021). Organic Farming Support Policy in a Sustainable Development Context: A Polish Case Study. Energies, 14, 4208. https://doi.org/10.3390/en14144208

Maeder, P., Fliessbach, A., Dubois, D., Gunst, L., Fried, P., Niggli, U. (2002). Soil Fertility and Biodiversity in Organic Farming. Science, 296, 1694–1697. https://doi.org/10.1126/science.1071

MRiRW (2021). Framework Action Plan for Organic Food and Farming in Poland 2021–2027. Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa.

Muça, E., Pomianek, I., Peneva, M. (2022). The Role of GI Products or Local Products in the Environment – Consumer Awareness and Preferences in Albania, Bulgaria and Poland. Sustainability 2022, 14, 4. https://doi.org/10.3390/su14010004

Nicolopoulou-Stamati, P., Maipas, S., Kotampasi, C., Stamatis, P., Hens, L. (2016). Chemical Pesticides and Human Health: The Urgent Need for a New Concept in Agriculture. Frontiers in Public Health, 4, 148. https://doi.org/10.3389/fpubh.2016.00148

Nieberg, H., Kuhnert, H. (2007). Support Policy for Organic Farming in Germany. Landbauforsch. Völkenrode, 1(57), 95–106.

NIK (2019). Wspieranie rozwoju rolnictwa ekologicznego. Informacje o wynikach kontroli (Supporting the Development of Organic Farming. Information on the Inspection by the Supreme Chamber of Control). Najwyższa Izba Kontroli, Warszawa. Retrieved from: https://www.nik.gov.pl/kontrole/P/18/043/ [accessed: 21.05.2023].

Nowogródzka, T., Szarek, S., Podstawka, M. (2013). Towarowość a sytuacja produkcyjno-ekonomiczna gospodarstw ekologicznych w Polsce (Marketability and Economic Production Conditions for Organic Farming in Poland). Wieś i Rolnictwo, 2(159), 157–168.

Orłowska, M.J. (2019). Competitiveness of Polish Organic Farms with Different Economic Size in Light of FADN Data. Annals Polish Association of Agricultural Economists and Agribusiness, 21, 217–224. https://doi.org/10.5604/01.3001.0013.2074

Pimentel, D., Hepperley, P., Hanson, J., Douds, D., Seidel, R. (2005). Environmental, Energetic, and Economic Comparisons of Organic and Conventional Farming Systems. BioScience, 55, 573–582. https://doi.org/10.1641/0006-3568(2005)055[0573:EEAECO]2.0.CO;2

Ploomi, A., Luik, A., Kurg, A. (2006). Why do organic farmers quit in Estonia? [In:] C.B. Andreasen, L. Elsgaard, L. Søndergaard Sørensen, G. Hansen, G., (Eds.), Organic Farming and European Rural Development. Proceedings of European Joint Organic Congress Organic Farming and Rural Development, Odense, Denmark, Danish Research Centre for Organic Farming (DARCOF), Tjele, Denmark, 120–121.

Ponisio, L.C., M'Gonigle, L.K, Mace, K.C, Palomino, J., de Valpine, P., Kremen, C. (2015). Diversification Practices Reduce Organic to Conventional Yield Gap. Proceedings of the Royal Society B: Biological Sciences, 282, 20141396. http://dx.doi.org/10.1098/rspb.2014.1396

Redlichová, R., Chmelíková, G., Blažková, I., Svobodová, E., Vanderpuje, I.N. (2021). Organic Food Needs More Land and Direct Energy to Be Produced Compared to Food from Conventional Farming: Empirical Evidence from the Czech Republic. Agriculture, 11, 813. https://doi.org/10.3390/agriculture11090813

Regouin, E. (2002). To convert or not to convert to organic farming. In Organic Agriculture: Sustainability, Markets and Policies (Agriculture and Food). Proceedings from an OECD Workshop, Washington DC, United States, September. OECD and CABI Publishing, Wallingford, UK, 4, 227–235. https://doi.org/10.1787/9789264101517-en

Regulation (EU)(2018). 2018/848 of the European Parliament and of the Council of 30 May 2018 on Organic Production and Labelling of Organic Products and Repealing Council Regulation (EC) No 834/2007, OJ L 150, 14.6.2018. Council of the European Union, Brussels, 1–92.

Rigby, D., Young, T., Burton, M. (2001). The Development of and Prospects for Organic Farming in the UK. Food Policy, 26, 599–613. https://doi.org/10.1016/S0306-9192(01)00023-9

Rutkowska, B. (2001). Azotany i azotyny w ziemniakach z gospodarstw ekologicznych i konwencjonalnych (Nitrate and Nitrite Content in Potatoes from Ecological and Conventional Farms). Roczniki Państwowego Zakładu Higieny, 52, 231–236.

Rynek Żywności Bio i Kosmetyków Naturalnych w Polsce (2019). Analiza Rynku i Prognozy Rozwoju na Lata 2019–2024 [Polish Market for Organic Food and Natural Cosmetics in 2019 (A Market Analysis and Development Outlooks for 2019–2024). PMR Market Experts, Kraków. Retrieved from: https://mypmr.pro/products/19073 [accessed: 21.05.2023].

Sahm, H., Sanders, J., Nieberg, H., Behrens, G., Kuhnert, H., Strohm, R., Hamm, U. (2013). Reversion from Organic to Conventional Agriculture: A Review. Renewable Agriculture and Food Systems, 28, 263–275. https://doi.org/10.1017/S1742170512000117

Sapbamrer, R., Thammachai, A.A. (2021). Systematic Review of Factors Influencing Farmers' Adoption of Organic Farming. Sustainability, 13, 3842. https://doi.org/10.3390/su13073842

Scialabba, N.E.-H., Müller-Lindenlauf, M. (2010). Organic Agriculture and Climate Change. Renewable Agriculture and Food Systems, 25, 158–169. https://doi.org/10.1017/S1742170510000116

Seufert, V., Ramankutty, N. (2017). Many Shades of Gray – The Context-dependent Performance of Organic Agriculture. Science Advances, 3, e1602638. https://doi.org/10.1126/sciadv.1602638

Seufert, V., Ramankutty, N., Foley, J.A. (2012). Comparing the Yields of Organic and Conventional Agriculture. Nature, 485, 229–232. http://doi.org/10.1038/nature11069

Sierra, L., Klonsky, K., Strochlic, R., Brodt, S., Molinar, R. (2008). Factors Associated with De-registration among Organic Farmers in California. California Institute for Rural Studies, Davis, CA.

Skinner, C., Gattinger, A., Krauss, M., Krause, H-M., Mayer, J., Van der Heijden M.G.A., Maeder, P. (2019). The Impact of Long-Term Organic Farming on Soil-Derived Greenhouse Gas Emissions. Scientific Reports, 9, 1702. https://doi.org/10.1038/s41598-018-38207-w

Smith, S., Paladino, A. (2010). Eating Clean and Green? Investigating Consumer Motivations towards the Purchase of Organic Food. Australasian Marketing Journal, 18, 93–104. https://doi.org/10.1016/j.ausmj.2010.01.001

Smoluk-Sikorska, J. (2021). Szanse i ograniczenia rozwoju rynku żywności ekologicznej w Polsce (Threats to and Opportunities for the Development of the Polish Market for Organic Food). Difin, Warsaw.

Sriwichailamphan, T., Sucharidtham, T. (2014). Factors Affecting Adoption of Vegetable Growing Using Organic System: A Case Study of Royal Project Foundation, Thailand. International Journal of Economics and Management Sciences, 3, 179. http://doi.org/10.4172/2162-6359.1000179

Tasiopoulou, S., Chiodini, A.M., Vellere, F., Visentin, S. (2007). Results of the Monitoring Program of Pesticide Residues in Organic Food of Plant Origin in Lombardy (Italy). Journal of Environmental Science and Health, Part B, 42, 835–841. http://doi.org/10.1080/03601230701555054. PMID:17763041

Willer, H., Trávnícek, J., Meier, C., Schlatter, B., (Eds.), (2021). The World of Organic Agriculture. Statistics and Emerging Trends 2021, Research Institute of Organic Agriculture FiBL. Frick and IFOAM – Organics International, Bonn. Retrieved from: https://orgprints.org/id/eprint/40014/1/1150-organic-world-2021.pdf [accessed: 21.05.2023].

Wojciechowska-Solis, J. (2022). Etnocentryzm konsumencki na rynku produktów lokalnych: determinanty zachowań konsumenta (Consumer Ethnocentrism on the Market for Local Products: Determinants of Consumer Behavior). Zagadnienia ekonomiki rolnej, 373(4), 75–92. https://doi.org/10.30858/zer/155842

Zieliński, M. (2021). Ecological Farming as a Source of Public Goods in Areas Particularly Pre-destined for its Development. Wieś i Rolnictwo, 4(193), 77–106. https://doi.org/10.53098/wir042021/04

Zieliński, M., (Ed.), (2022). Kierunki i możliwości rozwoju rolnictwa ekologicznego w Polsce w ramach Europejskiego Zielonego Ładu (Directions and Opportunities for the Development of Organic Farming in Poland as Part of the European Green Deal). Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej – Państwowy Instytut Badawczy, Warszawa.

Ziętara, W., Mirkowska, Z. (2021). The Green Deal: Towards Organic Farming or Greening of Agriculture? Zagadnienia Ekonomiki Rolnej, 368, 29–54. https://doi.org/10.30858/zer/135520

Zuba-Ciszewska, M., Kowalska, A., Manning, L., Brodziak, A. (2019). Organic Milk Supply in Poland: Market and Policy Developments. British Food Journal, 121, 3396––3412.

EKONOMICZNO-SPOŁECZNE PRZYCZYNY REZYGNACJI Z ROLNICTWA EKOLOGICZNEGO: POLSKIE STUDIUM PRZYPADKU

STRESZCZENIE

Cel: Praca stanowi próbę wypełnienia luki w badaniach dotyczących przyczyn zaprzestania uprawy ekologicznej w Polsce. Celem artykułu było rozpoznanie przyczyn rezygnacji polskich rolników z prowadzenia gospodarstwa ekologicznego oraz barier i czynników warunkujących powrót do rolnictwa ekologicznego. **Metody:** W pracy wykorzystano dane z badania przeprowadzonego wśród 134 polskich rolników, którzy zrezygnowali z uprawy ekologicznej. Badanie zostało przeprowadzone wśród rolników, którzy zaprzestali ekologicznej uprawy w okresie między 2014 a 2018 rokiem. Składało się z dwóch etapów: pierwszy to wywiad z grupą 18 rolników, którzy zrezygnowali z uprawy ekologicznej. Drugi etap to badanie za pomocą kwestionariusza ankietowego, który został wypełniony przez rolników, którzy zrezygnowali z produkcji organicznej. Badanie zostało przeprowadzone w 2021 roku. Pierwotnie wysłano 534 kwestionariusze. Ponieważ odsetek zwrotu był niski, procedura została powtórzona dwukrotnie. W rezultacie otrzymano 134 zwrotnych kwestionariuszy spośród ogólnej liczby 1569. **Wyniki:** Badania dowiodły, że najważniejszymi przyczynami rezygnacji z prowadzenia gospodarstwa ekologicznego było: zakończenie pięcioletniego okresu finansowego wsparcia, wysokie koszty produkcji, zbyt niski poziom wsparcia, niskie plony oraz nieopłacalność produkcji. Wśród trzech badanych typów rolników, dominował typ „pragmatyczny zaangażowany", który

w wyborze ekologicznej metody gospodarowania kierował się zarówno motywami ‚ekonomicznymi w postaci finansowego wsparcia i przychodów, jak i motywami środowiskowymi, ale wśród przyczyn rezygnacji z prowadzenia gospodarstwa główne znaczenie miał czynnik finansowy (zakończenie pięcioletniego programu wsparcia) i instytucjonalny (uciążliwa biurokracja i kontrole). **Wnioski:** W badaniach dotyczących rolnictwa ekologicznego ważne znaczenie ma problem przyczyn rezygnacji niektórych rolników z prowadzenia gospodarstwa ekologicznego. Jest stosunkowo niewiele opracowań z tego zakresu, pomimo że skala rezygnacji z rolnictwa ekologicznego w niektórych krajach jest znaczna. Polska jest przykładem kraju, w którym zjawisko wycofania z rolnictwa ekologicznego w kilku ostatnich latach nasiliło się i spowodowało spadek powierzchni użytków ekologicznych. W latach 2014–2018 spadek ten wyniósł 185 tys. ha.

Słowa kluczowe: uprawa ekologiczna, przyczyny zaprzestania, wsparcie finansowe, środowisko instytucjonalne, bariery powrotu, Polska