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THE EUROPEAN GREEN DEAL AND THE OPPORTUNITIES AND RISKS OF ORGANIC FARMING IN POLAND

Dagmara Hajdys*

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ABSTRACT

The purpose of the article. The aim of the study is to identify the key assumptions of the European Green Deal strategy with regard to organic farming. Special attention was paid to the opportunities and risks of the transition to "green" agriculture in Poland. It is assumed that the transition to organic farming in Poland will require a change in the architecture of agriculture with the development of a compromise between environmental and sectoral needs.

Methodology. The article is a review and the following research methods were used to achieve the intended purpose: a review of the literature on the subject, EU regulations and statistical data on agriculture, including organic agriculture in Poland, the descriptive and inductive method.

Results of the research. The European Green Deal is an ambitious strategy for the European Union to meet today's economic, social and, above all, environmental challenges. The main objectives of the document are to achieve zero greenhouse gas emissions by 2050, to decouple economic growth from the overexploitation of natural resources, to move towards a clean circular economy, to combat biodiversity loss and to reduce pollutant emissions. All of these goals are directly or indirectly related to the agricultural sector. Two strategies are particularly relevant to this sector: "From Field to Fork" and the EU Biodiversity Strategy 2030. Agriculture in Poland is changing. Despite the gradual transition from conventional to organic farming, the dynamics of the transformation are unsatisfactory. A characteristic feature of organic farms is their commodity nature, with a predominance of crop production. Farms specialising in livestock or mixed farming are a small percentage. The European Green Deal brings both opportunities and threats for Polish

* dr hab., prof. UŁ, Katedra Bankowości Centralnej i Pośrednictwa Finansowego, Wydział Ekonomiczno-Socjologiczny, e-mail: dagmara.hajdys@uni.lodz.pl, https://orcid.org/0000-0001-6371-5423.

organic farming. The reduction of greenhouse gas emissions and healthy food for consumers are undoubtedly benefits of the proposed changes. There are also dangers of an economic nature. Those in power have a huge responsibility to adopt solutions that reconcile environmental and social interests.

Keywords: European Green Deal, agriculture, organic farming.

JEL Class: Q01, Q55, R11, Z13.

INTRODUCTION

In recent weeks, pictures of protesting farmers from almost every country in the European Union have circulated around the world. The reason? Disagreement with the solutions adopted in the European Green Deal (EGL). What is the European Green Deal and why does it evoke such strong emotions?

The European Green Deal is a very broad and multifaceted environmental-economic-social strategy. The concept of the Green Deal was being developed before the COVID-19 pandemic, at the end of 2019, but it is only from 2023 onwards that action on climate transformation has accelerated. Some of the regulations included in the Green Deal have already been adopted – this includes, for example: Fit for 55, a package of directives and regulations on energy and the move towards climate neutrality. In 2021, the European Climate Law was also adopted – a landmark regulation (Regulation, 2021) assuming the neutrality of the entire Union by 2050 and setting an interim target: a 55% reduction in greenhouse gas emissions by 2030 compared to 1990. The Green Deal covers all sectors of the economy, including agriculture although the assumptions regarding agricultural policy have not yet been turned into final regulations. The proposals contained in the GMO with regard to the agricultural economy concern its reconstruction in an environmentally friendly direction.

The environmental problems, dynamic changes and climatic anomalies observed in recent years give rise to the need for continuous adaptation of the economy to change, including agriculture, which in Poland accounts on average for 8.4% of total greenhouse gas emissions.

The aim of the study is to identify the key assumptions of the European Green Strategy with regard to organic farming. Particular attention is paid to the opportunities and threats arising from the need to switch to "green" agriculture in Poland.

It was assumed that the transition to organic farming in Poland would require a change in the architecture of agriculture with the development of a compromise between environmental and sectoral needs. Two time periods were chosen for the study: 2010 and 2020, in order to show changes over the decade.

The article is a review, and the following research methods were used to achieve the intended purpose: a review of the literature on the subject, EU regulations and statistical data on agriculture, including organic agriculture in Poland, the descriptive and inductive method.

1. THE EUROPEAN GREEN DEAL

In December 2019 the European Commission adopted a document called the European Green Deal. This is a new strategy for growth that aims to transform the

European Union (EU) into a fair and prosperous society living in a modern, resource-efficient and competitive economy that achieves zero net greenhouse gas emissions by 2050 and decouples economic growth from the use of natural resources (European Commission, 2019).

At the heart of the environmental transition was the conviction that net greenhouse gas emissions in the EU must be reduced by at least 55% by 2030, and that so-called climate neutrality must be achieved by 2050 at the latest. In addition to reducing greenhouse gas emissions, restoring Europe's biodiversity was seen as an urgent necessity to realise the vision that by 2050 the EU society should be resilient to climate change and fully adapted to its unavoidable impacts (Guzal-Dec, 2022: 424).

The strategy aims to protect, conserve and enhance the EU's natural capital and to protect the health and well-being of citizens from environmental risks and negative impacts. The document is an integral part of the Commission's strategy to implement the UN 2030 Agenda for Sustainable Development and the Sustainable Development Goals (European Commission, 2019).

The European Green Deal (EGD) is a set of policy initiatives and strategies for deep transformation across all sectors of the economy. It identifies eight closely interlinked and complementary areas for action (Figure 1), the implementation of which requires particular attention to potential trade-offs between economic, environmental and social objectives. Implementing the assumptions of the EGD will require the use of all policy instruments, i.e., regulation and standardisation, investment and innovation, national reforms, dialogue with social partners and international cooperation. To ensure that everyone is included, the European Pillar of Social Rights will guide the direction of action (European Commission, 2019).

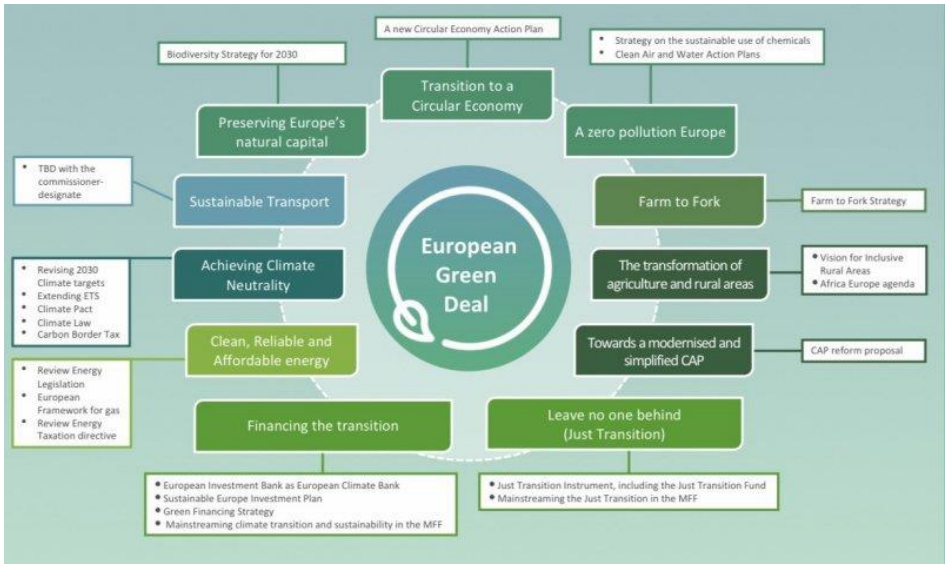

Figure 1. European Green Deal

Source: European Commission (2019).

Almost all of the assumptions included in the EGD are directly or indirectly related to agriculture through agricultural production, processing, efficient food management, ecosystem services or greenhouse gas sequestration from land use activities. The implementation of two strategies will be particularly important for the agricultural sector:

- "farm to fork" strategy for a fair, healthy and environmentally friendly food system;
- protecting and restoring ecosystems and biodiversity.

The "farm to fork" strategy is a key element of the Green Deal. It comprehensively addresses the challenges of sustainable food systems and recognises the inextricable links between healthy people, healthy societies and a healthy planet (European Commission, 2020a: 2).

European food is already the global standard for food that is safe, wholesome, of high quality and available in sufficient quantities. This is the result of years of EU policies to protect human, animal and plant health, and the efforts of our farmers, fishermen and aquaculture producers. European food should also become the global standard for sustainability. This strategy aims to reward those farmers, fishermen and other actors in the food chain who have already made the transition to sustainable practices, to enable others to do so and to create additional business opportunities for them (European Commission, 2020a: 3).

For the agricultural sector, the following objectives have been adopted in the strategy (Michalak and Rydz-Zbikowska, 2022: 265):

- reduce the use of chemical pesticides and associated risks by 50%;
- reduce nutrient losses by at least 50%, while ensuring that soil fertility is not compromised;
- a reduction of at least 20% in the use of fertilisers by 2030 through the application of balanced fertilisation and nutrient management and improved nitrogen and phosphorus management throughout the life cycle of crops;
- a 50% reduction in the use of antimicrobials in livestock and aquaculture, and used in aquaculture;
- the promotion of organic farming, with 25% of agricultural land to be farmed according to organic principles.

Therefore, although the EU's transition towards sustainable food systems has begun in many areas, food systems remain one of the main drivers of climate change and environmental degradation. There is therefore an urgent need to reduce dependence on pesticides and antimicrobials, reduce over-fertilisation, strengthen organic farming, improve animal welfare and reverse biodiversity loss (European Commission, 2020a: 3).

Implementing the “farm to fork” strategy is the first factor in making the 'circular economy' a viable option. In addition to the challenges faced by farmers, other links in the food chain should be involved in improving the environment, including the food processing and retail sectors, by addressing transport, storage, packaging and food waste. Encouraging the public to consume sustainably produced food at affordable prices and with nutritional and health benefits is also part of the strategy (Wrzaszcz and Prandecki, 2020: 162). Agricultural practices should combat climate change, protect the natural environment and not reduce biodiversity (Boell, 2020). Innovation, especially technological innovation, should play an important role in promoting environmentally and climate-friendly agriculture.

In May 2020, as part of the European Green Deal, the EU adopted the EU Biodiversity Strategy 2030 (ESB) entitled 'Bringing nature back into our lives'.

The document sets out a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. The ESB 2030 promises to restore Europe's biodiversity for the benefit of people, the climate and the planet, and sets out concrete actions and commitments for member countries to meet by 2030.

Biodiversity is also key to ensuring food security in the EU and globally. Its loss threatens food systems and puts our food security and food policies at risk. Biodiversity also promotes healthy and nutritious diets, contributes to improved

rural livelihoods and increases agricultural productivity (European Commission, 2020b: 2).

The above strategy differs little from the "farm to fork" strategy. Both include a very similar set of actions to reduce and restore biodiversity. In addition, the Biodiversity Strategy includes a number of objectives that directly or indirectly address the protection of agricultural soils, including (European Commission 2020b: 17; Smerczak et al., 2021: 14–15):

- establishing protected areas on at least 30% of Europe's land and 30% of its marine territory;
- restoring degraded ecosystems on land and at sea by increasing production in organic farming systems and increasing the number of nature-friendly elements in the agricultural landscape;
- reversing the decline of pollinating insects;
- reduce pesticide use and risks by 50% by 2030;
- planting three billion new trees in full respect of ecological principles.

The strategy also sets other objectives, including: buffer zones, whether subject to crop rotation or not, fallow land, hedgerows, non-productive trees, terrace walls, ponds. Their significant value is mainly manifested in carbon sequestration, prevention of soil erosion and depletion, filtration of air and water, and support of climate change adaptation processes (Polityka Insight, 2021: 35).

To strengthen action on biodiversity conservation, in May 2021 the European Commission adopted the EU Action Plan for Reducing Air, Water and Soil Pollution entitled 'A pathway to a healthy planet for all. An EU Action Plan for the elimination of water, air and soil pollution'. The vision set out in this plan by the EU is to reduce pollution by 2050 by reducing the levels of toxic substances in, inter alia, soils to levels considered harmless to human health and the proper functioning of natural ecosystems (European Commission, 2021).

The European Green Deal is a plan to transform the European Union's economy to minimise the use of natural resources while maintaining its international competitiveness. The plan has implications for both the agricultural sector and consumers. Among the measures proposed are restrictions on the use of plant protection products, fertilisers and antimicrobials. The development of organic farming, the protection and restoration of ecosystems and the enhancement of the biodiversity of natural resources will be promoted (Guzal-Dec, 2022: 424).

Poland is obliged to implement both the 2030 Agenda and the European Green Deal, which poses additional difficulties as one of the few countries trying to prolong the use of coal as an energy source and postpone the phase-out of the coal economy. Legislative work is currently underway on an agricultural code that will enable the implementation of EGD solutions (Tobaszewski, 2021: 154). The wave of farmer protests sweeping through European countries, including Poland, calls

for a second look at the assumptions of the strategy under discussion. There is already a debate about the need for a revision of assumptions and softening of some of the demands. The final solutions will have to wait for the new term of the EU authorities, which will determine the final, probably new shape of the European Green Deal. The direction of the solutions will largely depend on the agreements reached with the protesting farmers.

2. POLISH ORGANIC FARMING AND THE CHALLENGES OF THE EUROPEAN GREEN DEAL

Europe as a continent is characterised by a temperate climate, good quality soils and a predominance of flat land, which is conducive to agricultural development. Poland is one of the larger EU countries, with an average level of forest cover and urbanisation, in a lowland environment, with a small area of water and wasteland. Most of the country's territory is therefore occupied by agricultural land. This large area means that Polish agriculture has one of the highest agricultural production potentials among EU countries, despite soil and climate quality that is moderately favourable for agriculture by European standards. Poland has more than 14.5 million hectares of agricultural land owned by farms, which after Brexit puts our country in the fourth place in the EU, after France, Spain and Germany (Polityka Insight, 2021: 38).

According to the 2020 agricultural census, the total number of farms in Poland was 1,317 thousand, covering 14,682 thousand hectares of agricultural land and providing employment for 9.40% of the total labour force. Compared to a decade earlier, the number of farms decreased by about 192 thousand (-12.7%). However, by far more than half (52.1%) are the smallest farms, with up to 5 ha of agricultural area. This is due to a decrease in the number of holdings in the agricultural area groups of 1 to 20 ha of agricultural area. The largest decreases were in the 1–2 ha group (by more than ¼) and the 5–10 ha group (by more than 16%). The smallest decrease was in the group of 2–3 ha of agricultural area. At the same time, the number of holdings in the group of 20 ha and more of agricultural area increased. The largest number of agricultural holdings increased by more than 50% in the group of 50 ha and more – Table 1 (GUS, 2022: 32–33). The total area of agricultural land is 14,953 million ha in 2020, an increase of only 1% (14,860 million ha) compared to 2010 (GUS, 2022: 68).

Table 1. Number of agricultural holdings in 2010 and 2020

Years	Total	Agricultural holdings with the area of agricultural land in ha								
		≤ 1	1-2	2-3	3-5	5-10	10-15	15-20	20-50	≥ 50
Total in thousands										
2010	1 509,1	24,9	300,6	213,3	276,5	346,3	151,5	72,0	97,0	27,0
2020	1 317,4	25,3	220,3	199,5	240,5	289,0	130,6	65,0	106,6	40,7
2010=100										
2020	87,3	101,6	73,3	93,5	87,0	83,4	86,2	90,2	109,9	150,5

Source: own elaboration based on GUS (2022).

As in 2010, in 2020 the largest number of farms was recorded in the following provinces: Mazowieckie (15.8% of the total number of farms in the country), Lubelskie (12.3%) and Małopolskie (9.6%), and the smallest in the following provinces: Lubuskie (1.5%), Opolskie (1.9%) and Zachodniopomorskie (2.2%) (GUS, 2022: 34).

Organic farming is an agricultural production system that ensures food production under environmentally friendly conditions. Elimination of synthetic means of production, care for soil fertility, high level of biodiversity, respect for the environment, preservation of the natural landscape, as well as reliance on plant and animal species present in a given ecosystem are conducive to the production of food with special health values (Jaroszczyk, 2014).

In 2010, the number of organic farms was 20,582 and increased steadily until 2013, reaching 26,598. From 2014 onwards, a systematic decrease is observed, with the number of organic holdings falling to 18,575 (9.8%) in 2020. In 2010, the total agricultural area under organic production was 519,068.43 ha, of which 212,983.68 ha was agricultural area under conversion (conversion from conventional to organic) and 308,094.75 ha was agricultural area after the conversion period. Similarly, in 2020, the total organic area was 509,291.27 ha, of which 76.9% was post-conversion area and 23.1% was conversion area. Organic area accounted for almost 3% of the total agricultural area in Poland. However, it should be clearly noted that there was a systematic decrease in the area of organic farmland in the period 2014–2020. The largest area of organic farmland was found in the Warminsko-Mazurskie (107 507.3 ha) and Zachodniopomorskie (101 638.6 ha) provinces, which accounted for 41.2% of the organic area in Poland.

This begs the question: what are the reasons for the decline in the number of organic farms? With reference to the opinions of recognised organic farmers Zbigniew Babalski, Robert Kuryluk and Peter Stratenwerth (Ziętara and Mirkowska, 2021: 35; Bańkowska and Jasiński, 2020: 36), the following reasons

can be identified: changes in the rules of support for organic farms (mainly orchards – walnut orchards) and the associated control system (documentation), lack of labour (despite theoretically large resources), occurrence of droughts, animal welfare requirements (especially difficult to implement on small farms where users also work outside the farm), low soil productivity. This last factor means that restoring the desired level of soil fertility (mainly organic matter) takes longer and requires more effort and resources.

Organic production is an extensive activity that requires a larger area and more labour than conventional production to achieve the same economic objectives. Data from the reports of the Agricultural and Food Quality Inspection Service (AFQIS) shows that organic farming is shifting towards an increase in area (Table 2).

Table 2. Structure of the organic agricultural area in Poland in 2010 and 2020

Years	Structure of the area under organic farming (%)					
	in 5 ha	5-10 ha	10-20 ha	20-50 ha	over 50 ha	Total
2010	25,1	24,9	20,5	15,9	13,6	100
2020	20,0	17,4	24,8	23,6	14,2	100

Source: own elaboration based on AFQIS (2011, 2021).

The data shows that the decline in the number of organic holdings has also been accompanied by a decline in the organic agricultural area. On the positive side, there has been a change in the structure of the farms, with a decrease in the number of small farms and an increase in the number of farms of 10 ha or more.

In 2010, meadows and pastures accounted for the largest share of organic agricultural area (42.3%). Fodder crops came second with 20.6%, and cereals accounted for 19.6% of the organic area. The other crop groups together accounted for 17.5% of the organic area. Farms engaged in crop production only accounted for 69.6%, and 30.4% operated mixed crop and livestock farms (AFQIS, 2011: 23). A decade later, of all organic agricultural producers, 78.2% operated farms were involved only in crop production, and 21.8% were involved in both crop and livestock production – Figure 2 (AFQIS, 2021: 25).

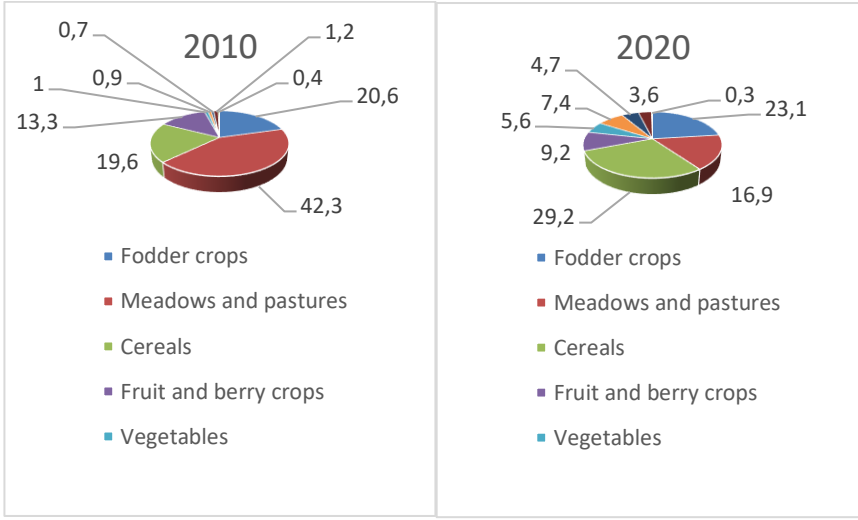

Figure 2. The structure of the area under organic farming in 2010 and 2020

Source: own elaboration based on AFQIS (2011, 2021).

The data presented in Figure 2 shows that the structure of organic agricultural land in Poland has changed. In 2010, meadows and pastures dominated (42.3%), followed by forage crops (20.6%), cereals (19.6%) and fruit and berry crops (13.3%). In 2020, the largest areas of organic farmland will be devoted to cereals (29.2%), forage crops (23.1%) and pastures and meadows (16.9%), and the smallest area to potatoes (0.3%).

In addition to crop production, livestock production plays an important role in the organic system. The scale of livestock production on organic holdings should be considered as a niche (Table 3). In terms of the number of physical animals kept in the organic system, poultry dominates, followed by cattle, sheep and goats, while the pig population is the smallest. In the case of cattle, dairy cows predominate.

Table 3. Ecological inventory 2015–2020 (in units)

Animal production	YEARS					
	2015	2016	2017	2018	2019	2020
Cattle for meat	9 144	8 433	8 096	7 486	8 320	8 341
Dairy cows	11 106	11 864	11 377	10 983	10 983	12 061
Other cattle	bd	bd	bd	bd	10 883	10 700
Pigs	6 309	4 449	3 893	3 221	4 189	3 253
Sheep	25 754	19 474	19 595	16 243	15 092	15 803

Goats	3 268	3 519	3 147	3 145	5 270	3 645
Poultry	171 107	216 101	222 540	316 064	481 153	696 153

Source: Zieliński (2022: 37).

The poultry population quadrupled between 2015 and 2020. The opposite trend was observed for the other livestock categories, although the intensity of the change varied between them when comparing the extreme years of the chosen study period. However, 2018 was a special year for livestock production, as the population of the other animal categories reached its lowest level, with the exception of poultry. In the case of cattle for meat, the stock decreased by 9% over the whole period, although it has been gradually increasing since 2018, compared to the previous year. In contrast, the statistics for the dairy cow population show a much more favourable dynamic of change. Despite periodic decreases throughout the period, the dairy cow population increased by 9%. In the case of the goat population, there were changes in each year, with increases alternating with decreases. During the period described, the goat population increased by 12%, with the most favourable year for this direction of production being 2019 (Zieliński, 2022: 37).

The results of the 2020 Agricultural Census show that in the period from June 2, 2019 to June 1, 2020 956 000 holdings (72.6%) applied mineral or lime fertilisers. Of the total number of farms, the proportion of farms using mineral fertilisers was 71.4% and the proportion using lime fertilisers was 21.3% – Table 4 (GUS, 2021:31).

Table 4. Mineral and lime fertiliser consumption in 2010 and 2020

Years	**Pure component fertiliser**				
	Mineral				**Calcium**
	Total	**Nitrogen**	**Phosphorus**	**Potassium**	
in thousand tonnes					
2010	1 771	1 024	352	396	951
2020	1 951	1 034	359	559	1 340
2010=100					
2020	110,2	101,0	102,0	141,2	226,8
per ha of agricultural land in good condition					
2010	1 226,6	70,9	24,3	27,4	40,9
2020	134,7	71,4	24,8	38,6	92,5

Source: GUS (2021).

Consumption of mineral fertilisers, including nitrogen, phosphorus and potassium (NPK), in the period under review was 10.2% higher than in 2010 and amounted to 1951,000 tonnes. In 2020, an average of 132.9 kg of NPK was used per hectare of agricultural land, including 129.1 kg of NPK on individual farms. Compared to 2010, the consumption of potassium fertilisers increased to the greatest extent – by 41.2% and amounted to 38.6 kg/ha. In addition, 71.4 kg/ha of nitrogen fertilisers and 24.8 kg/ha of phosphate fertilisers were applied to crops, i.e., more than in 2010, by 2.0% and 41.2% respectively. The consumption of calcium fertilisers more than doubled compared to 2010 and amounted to 1340,000 tonnes (951,000 tonnes in 2010). The increase in the consumption of these fertilisers was influenced, among other things, by the introduction of the 2019 National Programme for environmental regeneration of soils through their liming and the related funding for the implementation of projects resulting in the improvement of environmental quality provided under *de minimis* aid (Ministry of Development, 2007).

In 2020, treatments with plant protection products were applied by around 70% of farms with agricultural land. The largest number of treatments were carried out to protect cereals (1595,000), followed by treatments in orchards and plantations of other permanent crops (730,000), which in turn was related to the higher frequency and diversity of pathogen incidence than in other crops. During the growing season, on average, nine treatments were carried out on the farm in orchards and permanent crops, two treatments in cereals and three in vegetables (Nowak et al., 2023: 47–48).

Organic farming in Poland is evidence not only of growing environmental awareness, but also of the country's growing economic potential in this area. It is a sector that not only responds to changing market needs, but also contributes to the protection of the environment and the promotion of sustainable development, as evidenced by changes in the structure of arable land, crops and livestock. The challenges posed by the European Green Deal in terms of promoting healthy, organic food, reducing fertiliser use and improving livestock welfare are a major challenge for small farms. The owners of large farms also point to many solutions that are not in line with the current possibilities of agriculture, which is reflected in numerous protests from representatives of this sector.

3. OPPORTUNITIES AND THREATS FOR THE POLISH AGRICULTURAL SECTOR ARISING FROM THE EUROPEAN GREEN DEAL

The European Green Deal imposes a number of obligations on the agricultural sector, the fulfilment of which will require a huge effort on the part of European farmers, including the Polish ones. It is assumed that the objectives set out in the strategy will be achieved by 2030. They mainly concern: changing agricultural

practices, reducing the use of pesticides by 50%, reducing the use of fertilisers by 20%, implementing modern technologies of precision agriculture, reducing the sale of antimicrobial agents intended for farm animals and aquaculture by 50%.

Polish agriculture is not fully prepared for the full implementation of the European Green Deal. This is due, among other things, to low farm productivity as a result of agricultural fragmentation, poor soil quality with low organic matter content and drying, and a shorter growing season than in Western Europe.

Threats can be seen in the deterioration of competitiveness or the displacement from the market of smaller farms for which the application of precision farming techniques is unprofitable and difficult to implement. It seems that it will not be possible to achieve all the assumed goals of the Green Deal, even if only those related to the allocation of 25% of agricultural land to organic farming (Nowak et al., 2023: 45).

One of the main obstacles depends on natural and agro-technical conditions. The main one is the growing season, which in Poland is shorter and more variable (195–223 days) than in Western Europe. Average air temperatures are also lower, with greater fluctuations in summer. Precipitation is unevenly distributed throughout the growing season. There is often a shortage of rainfall in May and June, while there is usually an excess of rainfall in July. In recent years, the winter period has also been characterised by anomalies, i.e., low snowfall, leading to the freezing of rape and winter barley crops (Kowalska and Bieniek, 2022: 616).

Polish organic farming is also currently facing organisational and production problems. One of the most important is the problem of selling ready-made batches of products that meet all the required criteria and, above all, the insufficient quantity of products collected in one place. It is the result of a weak system of self-organisation, i.e., the association of farmers, for whom such a strategy would facilitate favourable negotiations and the sale of the agricultural products produced. This problem is a direct consequence of the wide dispersion of farms and their relatively small size. On the one hand, grouping farmers into large producer associations would strengthen their position on the market as partners of the large retail chains, but on the other hand it raises many concerns and uncertainties. The retail chains expect continuous and large deliveries and at the same time make demands that are difficult to meet, e.g., delivery of products at a specific time and place, deferred payment, use of specific packaging. Such requirements can only be met by large associations of producers; small producers, due to their specificity, are pushed out of the system of such cooperation (Nowogródzka, 2012: 60).

Implementing the European Green Deal will require Polish agriculture to increase investment in the development of small family farms, significantly reduce the use of artificial fertilisers and pesticides, reduce production and consumption, shorten supply chains and reduce land concentration.

Adopting the target in the EGD of allocating 25% of the European Union's agricultural area to organic farming may be a difficult hurdle for Poland to overcome, where this indicator fluctuates around 5%. According to the information presented in the previous section, the share of organic farms in the total agricultural area shows a decreasing trend in the period 2010–2020, which will require even more efforts at all legal, organisational and financial levels to reach this target. In order to achieve the expected effects, two solutions are adopted. The first involves a comprehensive system of incentives for farmers so that this production is profitable for them and offers competitive prices on the market. The second, which is quite drastic, assumes administrative intervention in the agricultural production process and, as it were, through a system of various obligations, 'forces' the conversion of the agricultural activity carried out into organic crops (Prutis, 2013: 53–54). This, of course, will not go unchallenged by farmers.

The European Green Deal points out that organically farmed land has about 30% more biodiversity than conventionally farmed land. Organic farmers are advised not to use chemical pesticides and synthetic fertilisers, and to leave part of their land fallow. The use of GMOs and ionising radiation is prohibited, and the use of antibiotics should be severely restricted. These organic practices are intended to contribute to increasing genetic biodiversity and crop yields (Niewiadomski, 2021: 289; Zapała, 2016: 112–113).

The biggest challenge, however, will undoubtedly be the EPC's stated goal of reducing greenhouse gas emissions. Agriculture is responsible for 10.3% of the EU's greenhouse gas emissions, and almost 70% of these emissions come from the livestock sector. These emissions consist of greenhouse gases other than CO2 (methane and nitrous oxide). Research to date indicates that more than half of total agricultural emissions in Poland are related to livestock farming, with 41.2% coming from enteric fermentation and 18.7% from animal excreta. Another important source is the use of agricultural soils (40.1%), in particular direct emissions from the cultivation of organic soils and the use of mineral fertilisers, as well as indirect emissions from the leaching of nitrogen compounds from the soil. A small proportion of total emissions from agricultural sources comes from the burning of crop residues (0.02%) (Wiśniewski, 2018: 1813–1820). The agricultural sector faces a major challenge in reducing greenhouse gas emissions.

Achieving carbon neutrality will require harnessing the potential of agricultural and forestry land to increase carbon sequestration in biomass and soils, adding organic matter to soils while reducing losses, optimising systems for storing, transporting and spreading livestock manure on fields and managing it appropriately, the extensive use of agricultural activities and agri-food processing in the development of renewable energy (including the production of biogas and biofuels), as well as a significant improvement in energy efficiency and an

increase in the share of renewable energy in plant and animal production (Wiśniewski and Marks-Bielska, 2022: 124). It should not be forgotten that until now, coal has been the primary heat source in agriculture, used to heat domestic and farm buildings. And this is where the next challenge of switching to renewable energy sources (RES) comes in.

This brings us back to the recent images of farmers protesting in Europe. Polish farmers have also taken to the streets in the cities, blocking the country's main roads. What are their concerns and demands?

Polish farmers have been protesting since February 9, 2024. One of the main reasons is the European Green Deal and its principles. This is followed by the influx of goods from Ukraine and the decline in the profitability of agricultural production. The European Green Deal is a very broad and multifaceted environmental, economic and social strategy. Although part of the strategy relates to the agricultural sector, it has not yet been formally legislated. One reason for the delay is the protests that are taking place in the run-up to the European Parliament elections.

In their protests, farmers are calling for a move away from what they see as restrictive legislation to reduce the high carbon emissions from farming, a 20% reduction in the use of fertilisers and antibiotics, the use of more land for non-agricultural purposes and an increase in the amount of land used for organic production.

Polish farmers are also protesting against the influx of Ukrainian food. At the end of June 2024, grain stocks in Europe will be around 28 million tonnes. Nine million tonnes of this is in Poland. Poland produces about 35–36 million tonnes of grain, so 25% will be in storage. This grain has to be disposed of in some way so that there are free warehouses, free granaries for the new harvest. Farmers are asking: how can this be done?

Another problem is the decline in the profitability of agricultural production. Inflation, the increase in production costs, has led to very low profitability. Farmers in the field-to-fork chain are the weakest link because they have no control over the prices of inputs, fertilisers, pesticides and energy. They also have no control over the prices of the products they produce and sell. This situation is also due to the fact that two years ago, the Ukrainian crisis caused prices to soar, both for agricultural inputs and for products sold on the farm. Now the markets have returned to normal and to pre-crisis prices. This has largely happened in the market for agricultural products, but not for inputs. The prices of fertilisers, pesticides and energy are still higher, i.e., they have not returned to their previous levels, as is noted by Professor Wawrzyniec Czubak of the Poznań University of Life Sciences (PAP, 2024).

What direction will changes and regulations take? This is a difficult question to answer at the moment. It will depend on the European Parliament elections, the

hostilities in Ukraine and this year's harvest. However, it is already clear from the statements made by the Polish government and the European Commission that the provisions of the EGD will be modified and loosened.

CONCLUSIONS

The European Green Deal is an ambitious strategy for the European Union to address today's economic, social and, above all, environmental challenges. The main objectives of the document are to achieve zero greenhouse gas emissions by 2050, to decouple economic growth from the overexploitation of natural resources, to move towards a clean circular economy, to combat biodiversity loss and to reduce pollutant emissions. All of these goals are directly or indirectly related to the agricultural sector.

For this sector, two strategies are of paramount importance: "With regard to agriculture, they impose a number of requirements aimed at improving the environment, including halting adverse natural and climatic changes". Although these strategies have not yet been formally adopted by EU member states, they have already generated a number of controversies and disputes.

Agriculture in Poland is changing. Despite the gradual transition from conventional to organic farming, the dynamics of the transformation are unsatisfactory. Organic farms are characterised by their commodity nature, with a predominance of crop production. There is a small percentage of farms specialising in animal husbandry or mixed farming. It is therefore necessary to change the "green architecture of agriculture" towards a modification of regulations, procedures, including certification procedures, and financing, which will facilitate a smooth transition of farmers to organic production. It should not be forgotten that the development of organic production is strongly dependent on the demand for organic products and thus the acceptance of higher prices for them compared to conventionally grown products. In the current situation, organic production should be considered as a niche product, dedicated to consumers with a higher level of affluence.

The European Green Deal presents both opportunities and risks for Polish organic farming. The reduction of greenhouse gas emissions and healthy food for consumers are undoubtedly benefits of the proposed changes. There are also dangers of an economic nature. Those in power have a huge responsibility to find solutions that reconcile the environmental (nature and climate protection) and social interests of farmers. And how will these interests be reconciled? We will be witnesses and participants in this evolution.

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EUROPEJSKI ZIELONY ŁAD A SZANSE I ZAGROŻENIA ROLNICTWA EKOLOGICZNEGO W POLSCE

Cel artykułu. Celem opracowania jest wskazanie kluczowych założeń strategii Europejskiego Zielonego Ładu w odniesieniu do rolnictwa ekologicznego. Szczególną uwagę zwrócono na szanse i zagrożenia wynikające z konieczności przejścia na „zielone" rolnictwo w Polsce. Założono, że przejście na ekologiczne rolnictwo w Polsce będzie wymagało zmiany architektury rolnictwa przy wypracowaniu kompromisu pomiędzy potrzebami środowiskowymi a sektorowymi.

Metoda badawcza. Artykuł ma charakter przeglądowy, a do osiągnięcia zamierzonego celu wykorzystano następujące metody badawcze: przegląd literatury przedmiotu, regulacji unijnych oraz danych statystycznych dotyczących rolnictwa, w tym ekologicznego w Polsce, metodę opisową i indukcyjną.

Wyniki badań. Europejski Zielony Ład to ambitna strategia dla Unii Europejskiej na współczesne wyzwania gospodarcze, społeczne, a przede wszystkim środowiskowe. Głównym celem dokumentu jest osiągnięcie do 2050 r. zerowego poziomu emisji gazów cieplarnianych, oddzielenie wzrostu gospodarczego od nadmiernego korzystania z zasobów naturalnych, przejście na czystą gospodarkę o obiegu zamkniętym, przeciwdziałanie utracie różnorodności biologicznej i obniżenie poziomu emisji zanieczyszczeń. Wszystkie wymienione cele bezpośrednio lub pośrednio powiązane są z sektorem rolniczym. Dla tego sektora najważniejsze znaczenie mają dwie strategie: „od pola do stołu" oraz unijna strategia na rzecz bioróżnorodności 2030. Rolnictwo w Polsce przechodzi przeobrażenia. Pomimo stopniowego przechodzenia z rolnictwa konwencjonalnego na rolnictwo ekologiczne, dynamika przemian jest niezadawalająca. Cechą charakterystyczną gospodarstw ekologicznych jest ich towarowy charakter, z przewagą produkcji roślinnej. Gospodarstw specjalizujących się w chowie zwierząt lub mieszanych jest niewielki odsetek. Europejski Zielony Ład niesie dla polskiego rolnictwa ekologicznego zarówno szanse, jak i zagrożenia. Ograniczenie emisji gazów cieplarnianych, zdrowa żywność dla konsumentów to niewątpliwie zalety postulowanych zmian. Są także zagrożenia, których podłoże ma charakter ekonomiczny. Na rządzących ciąży ogromna odpowiedzialność przyjęcia takich rozwiązań, które pogodzą interes środowiskowy i społeczny.

Słowa kluczowe: Europejski Zielony Ład, gospodarka rolna, rolnictwo ekologiczne.

JEL Class: Q01, Q55, R11, Z13.

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