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AGRICULTURE AND THE EUROPEAN GREEN DEAL

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Abstract

Growing environmental and climate problems are forcing the search for effective solutions to economic activity, including agriculture. The popularization of relevant production practices and techniques is of great importance in this regard. The direction of European agriculture is of particular importance for solving environmental and climate problems. For years, strategies or sustainable development programs have been implemented, which, despite initiating the desired direction of changes, are still insufficient in terms of perceived needs. In December 2019, the European Commission issued a communication on the European Green Deal strategy, which was intended to launch further international action to achieve ambitious climate and environmental targets.

The aim of the paper is to present the main issues related to the implementation of the European Green Deal strategy, including agriculture, and to outline the challenges facing it. The study used a review of literature and legal acts.

The results of the study indicated the appropriateness of seeking further economic solutions consistent with the European Green Deal strategy. The goals included in the European Green Deal are very ambitious and will require a complex, multi-threaded approach to agricultural policy and a change in the attitude of farmers, i.e., greater consideration of non-production aspects of their activity, in particular in the field of environmental protection. At the same time, the European Green Deal should be assessed in a much broader sense than in terms of environmental requirements. The holistic nature of this document makes it a step towards building a new economy that takes into account the non-economic consequences of the actions taken.

Keywords: agriculture, European Green Deal, the natural environment, climate.

JEL codes: Q01, Q12, Q15, Q18, Q56.

Introduction

The direction of European agriculture is of particular importance for solving environmental and climate problems. For years, strategies and sustainable development programs have been implemented, which, despite having taken the right initiatives, are still insufficient in terms of perceived needs. The 2003 reform of the European Union's Common Agricultural Policy (CAP) shifted financial aid for farmers towards direct decoupled support, thus limiting their motivation to intensify their production. The modified rules of support for agriculture entailed new obligations for farmers, who are expected to farm their land in an environmentally and climate-friendly manner. Many problems resulting from climate change and related to agriculture can be addressed by implementing appropriate production practices and techniques.

As indicated by international teams of specialists, of eight million species living currently on the planet, one million are at risk of extinction. The pollution and devastation of forests and oceans is also a major problem (European Commission, 2019a for Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019; International Resource Panel, 2019). Increasing climate change and environmental problems (including the pollution and depletion of environmental resources, decreased biodiversity) make it necessary to take additional, systemic international actions, often based on new legal solutions and European standards. The European Environment Agency points to several important areas where actions should be taken to make transitions possible. These areas include: a) strengthening methods of implementation, integration, and cohesion of the policy; b) developing a more systemic, long-term policy framework and related objectives; c) carrying out international actions towards sustainable development; d) promoting innovation through social action; e) increasing the scale of investments and reorienting finance; f) managing risk and ensuring socially just transitions; g) linking knowledge to action (EEA, 2019).

In view of the deteriorating state of the natural environment in the European Union, including through the increasing effects of climate change, in December 2019, the European Commission prepared a communication on the European Green Deal. This communication was aimed at initiating international actions seeking to achieve economic objectives with much stronger respect for environmentally and climate-friendly practices (European Commission, 2019a). It updated the EC's commitment to address climate- and environment-related problems, which has been identified as the most important task currently faced by society.

The aim of the paper is to present the main issues related to the implementation of the European Green Deal strategy and to identify the key challenges for the agricultural sector.

CAP reforms relevant to environmental and climate protection

The functioning of EU agriculture is based on the principles of the Common Agricultural Policy, which was one of the first Community policies. Since its inception (1962), the CAP has been subject to changes, usually of an evolutionary nature (Siekierski, 2020). Since the beginning of the 1990s, successive reforms have been increasingly related to the need to protect the environment and climate.

The first major reform, which not only initiated far-reaching changes in the CAP but also addressed the issue of agriculture in much broader terms, was the MacSharry reform (1992). For the first time, the CAP was closely linked to the issues regarding rural areas and the protection of the natural environment. As part of this reform, the so-called accompanying measures were introduced to encourage farmers to use more environmentally friendly methods. Actions were taken towards the extensification of agriculture and increasing the role of farmers in the protection of the environment, and rural development processes as well as processes ensuring food security were supported (Maciejczak, 2010).

The document which continued the reform initiated by MacSharry is Agenda 2000, presented in 1997. One of its most important objectives was to change the paradigms of the CAP and the protection of the environment became one of its aims. It introduced the possibility for farmers to receive compensation for income foregone or additional costs related to participation in implementing specific actions for the natural environment. The most important actions resulting from Agenda 2000 include the provision of animal welfare and the preservation of ecosystems (Maciejczak, 2010).

Further significant changes in the Common Agricultural Policy occurred in 2003 with the introduction of the Fischler reform¹ (the so-called Luxembourg reform). These changes applied not only to the measures, but also the approach to agricultural policy (Siekierski, 2020). Pursuant to that reform, the first pillar of the CAP was to focus on supporting agricultural income, while the task of the second pillar was to protect the natural environment and to support rural development. What was considered particularly important were the cross-compliance rules: a set of recommendations concerning, *inter alia*, standards for protecting the environment, human, animal, and plant health, which should be observed by farmers for the purpose of receiving financial support under the CAP. Based on this reform, CAP support was decoupled, which consisted in replacing the majority of existing direct payments with a single common payment attributed to the area of the holding.

In 2013, another reform was carried out, which was finally implemented in 2015. The reformed CAP took four key issues into account: 1) rural development, 2) financing, management, and monitoring of the CAP, 3) direct payments to farmers, and 4) market cooperation. Its objective was, *inter alia*, to promote sustainable agriculture and innovation. The effect of this reform was the introduction of a greening mechanism, according to which European farmers were to comply with

¹ The reform is named after Commissioner for Agriculture, Franz Fischler.

sustainable agricultural practices aimed at protecting the soil and biodiversity. The implementation of these practices was a prerequisite for receiving 30% of the value of direct payments. This mechanism introduced a requirement to diversify crops being cultivated, maintain permanent grassland, and protect ecological zones within farms (Euractiv, 2020).

European Green Deal – essence

In line with the European Commission's objectives, the European Green Deal is a new strategy for growth. Its aim is to build a modern, resource-efficient and competitive economy that will have reached net-zero greenhouse gas emissions by 2050 and that economic growth will include the optimal use of natural resources (European Commission, 2019a). Community actions are to put the European economy and society on a sustainable track, and the transition is to apply to all sectors of the economy, including agriculture. The European Green Deal is an integral part of the strategy developed by the current Commission and aimed at, *inter alia*, implementing the UN 2030 Agenda for Sustainable Development and the Sustainable Development Goals (UN, 2020).

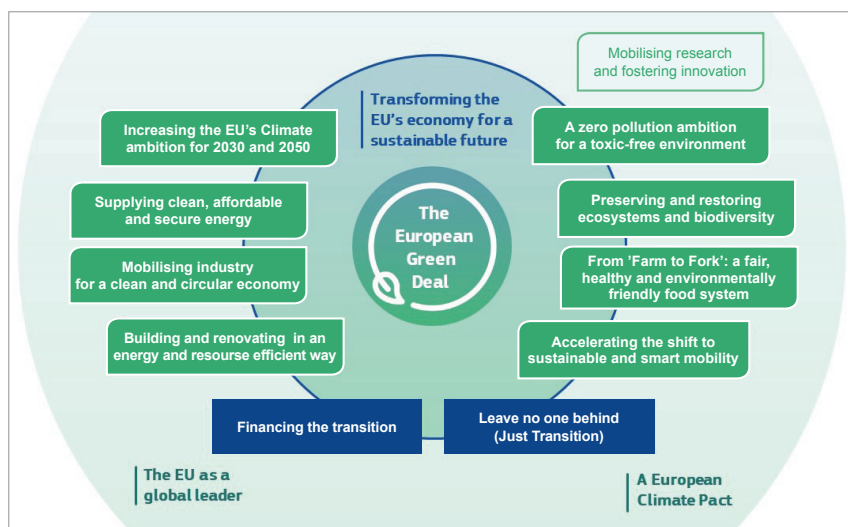


Fig. 1. Elements of the European Green Deal.

Source: (European Commission, 2019a).

The implementation of the European Green Deal requires a modification of policy strategies in broad terms (including clean energy supplies, in the sectors of industry, production and consumption, transport, and agriculture). In order to achieve the specified objectives, it is necessary to attach greater importance to the protection and restoration of natural ecosystems, the sustainable use of resources, and the improvement of the health of society. In these areas profound changes are needed most.

The areas of action defined by the EC are closely interrelated and they complement each other; nevertheless, particular caution is required in the case of potential trade-offs among economic, environmental, and social targets. Various policy tools are used for the purposes of the Green Deal, such as: regulations and standardization, investment and innovation, national reforms, dialog with social partners, and international cooperation. The Commission cooperates with the Member States to boost EU efforts to enforce and effectively implement the applicable legislation and policies relevant to the Green Deal.

Key initiatives at the EU level²

The implementation of the European Green Deal requires taking a number of actions aimed at improving the state of the natural environment and stabilizing the climate through developing effective Europe-wide actions. The Communication presented a preliminary action plan covering the key policies necessary for achieving the European Green Deal. Several dozen initiatives have been planned for the years 2020-2021, including:

- a) greening of the Common Agricultural Policy, including the Farm to Fork Strategy;
- b) preservation and protection of biodiversity;
- c) ambitious climate targets and linking to the European Climate Pact;
- d) clean, affordable, and secure energy;
- e) striving for a zero-pollution ambition for a toxic-free environment;
- f) industrial strategy for a clean circular economy;
- g) sustainable and smart mobility;
- h) mainstreaming the issue of sustainable development into all areas of EU policy.

Ad. a) An important area of EC activity is the greening of the Common Agricultural Policy, including the implementation of the Farm to Fork Strategy (European Commission, 2020a). As stressed by Frans Timmermans (European Commission, 2019d), “The coronavirus crisis has shown how vulnerable we all are, and how important it is to restore the balance between human activity and nature. At the heart of the Green Deal the Biodiversity and Farm to Fork strategies point to a new and better balance of nature, food systems and biodiversity; to protect our people’s health and well-being, and at the same time to increase the EU’s competitiveness and resilience. These strategies are a crucial part of the great transition we are embarking upon.”

The objective of the Farm to Fork Strategy is to create a fair, healthy, and environmentally friendly food system. Food produced in Europe should be characterized by safety, nutritional values and high quality, and the method of its production should be environmentally friendly and climate-neutral. Several decades ago, the Union initiated a transition to more sustainable production systems, but the production of food still results in the pollution and depletion of environmental resources, the loss of biodiversity, and climate change. At the same time, we observe the problem of

² The quoted initiatives have been indicated in: (European Commission, 2019b).

food waste and production of low-quality food (contributing to many diseases), which increases the need to develop systemic solutions at the individual links in the food chain. Farmers are the first link of the food chain and this determines their critical role in implementing the Farm to Fork Strategy. Farmers' activities should prevent climate change, protect the natural environment, and avoid reducing biodiversity. As pointed out by EU Commissioner for Agriculture, J. Wojciechowski (Boell, 2020), "The new strategy will not be based on imposing further requirements or restrictions on farmers, but will primarily give more support to the production of healthy food with less use of fertilizers and plant protection products (...) The EU wants to support family farms".

The strategy indicated the main targets concerning various agricultural practices, which are to be achieved by 2030, namely (European Commission, 2020a):

1. Concerning the use of pesticides. The target adopted is as follows:

- reducing the use of chemical pesticides and related risks by 50%,
- reducing the use of more hazardous pesticides by 50%.

The negative effect of pesticide use in agriculture on the contamination of soil, water, and air has been indicated as the justification for the adopted targets.

2. Concerning the use of fertilizers. The target adopted is as follows:

- reducing nutrient losses by at least 50%, while preventing deterioration in soil fertility,
- reducing the use of fertilizers by at least 20%.

The excess of nutrients in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and climate; this led to the adoption of the targets aimed at rationalizing fertilizer management on farms.

3. Concerning the sale of antimicrobials. In this respect, the target adopted is as follows:

- reducing the sale of antimicrobials for farmed animals and in aquaculture by 50%.

This results from the increased resistance of microorganisms to antimicrobials, due to their common use in treating animals and humans. Every year, this increase in resistance leads to an estimated 33,000 deaths in the EU, which makes it essential to change European agriculture in this area.

4. Concerning the popularization of organic farming. An ambitious target has been adopted in this area, namely:

- 25% of utilized agricultural area should be used in accordance with organic farming rules.

The adoption of this ambitious target was determined both by its importance in the protection of environmental resources (environmentally friendly agricultural practices) and the positive impact both on climate and biodiversity.

An important role in the popularization of the desired actions in agriculture is and will be played by the Common Agricultural Policy. In the next financial perspective covering the years 2021-2027, approx. 40% of the total CAP budget will be allocated for environmental and climate actions. In view of the above, national

strategic plans should reflect the European principles of subsidizing agriculture, including the climate and environmental criteria forming part of the European Green Deal and of the Farm to Fork Strategy. In line with the objectives, national strategic plans should be an incentive to popularize practices of sustainable farming, including precision and organic farming, as well as of animal welfare, agroecology, and agroforestry. A new proposal in national strategic plans will be the so-called eco-schemes, which are designed to “reward farmers for improved environmental and climate performance, including managing and storing carbon in the soil, and improved nutrient management to improve water quality and reduce emissions” (European Commission, 2019b). Strategic plans will also include significant restrictions on the use of chemical plant protection products as well as of fertilizers and antibiotics. Innovation, including technological innovation, will play an important role in promoting environmentally and climate-friendly agriculture. The Farm to Fork Strategy will also contain proposals to empower farmers in the food production chain.

The implementation of the Farm to Fork Strategy should contribute to the use of solutions forming part of the circular economy. In addition to the challenges to be faced by farmers, other links in the food production chain should also be involved in improving the state of the environment, including the food processing and trade sectors, through activities in the areas of transport, storage, and packaging of food, as well as food waste. The strategy is also to encourage society to consume sustainable food, which is affordable and has nutritional and health benefits.

Ad. b) The European Green Deal also provides for actions to protect and restore ecosystems and biodiversity. The role of ecosystems is enormous, as they perform various necessary functions also for humans, providing food, fresh water, clean air, and shelter for many species; in addition, they reduce the occurrence of pests and diseases and contribute to regulating climate. As indicated in the report presented by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2020), global biodiversity is decreasing as a result of land and sea area use change, indirect extraction of natural resources, as well as climate change. These problems increase the need for the EC to develop a strategy for biodiversity aimed at increasing the area of protected land and sea areas, which are particularly valuable in terms of biodiversity, taking into account the Natura 2000 network. As indicated in the Commission paper, all EU policies should contribute to preserving and restoring the natural capital of Europe (European Commission, 2019).

The need to protect natural capital also refers to forest ecosystems. The objective is to increase the area of forest areas due to their importance for the environment and climate (including CO₂ sequestration), which also requires drawing up an appropriate new EU forestry strategy. National strategic plans developed under the Common Agricultural Policy should encourage forest managers to protect and grow forests as well as to manage forests in a sustainable manner.

The sustainable blue economy is an important part of the protection of biodiversity and ecosystems, due to the role played by the oceans in mitigating climate

change. A sustainable economy requires the proper use of water and sea resources, the identification of new sources of protein, and the use of growing opportunities to acquire energy from marine renewable sources.

The announcement of the European Green Deal resulted in the publication of the EU Biodiversity Strategy for 2030 (European Commission, 2020b), with the symbolic subheading *Bringing nature back into our lives*. It was not a coincidence that both documents were published at the same time, as they are closely interrelated. This shows that the holistic approach to problem solving, resulting from the European Green Deal, is also being put into practice.

The Biodiversity Strategy for 2030 identifies the priorities of the European Union's long-term nature conservation policy. The primary objective is to ensure the restoration, resilience, and adequate protection of all ecosystems by 2050. This objective is to be achieved by entering, by 2030, the path to recovery, allowing for the preservation of valuable ecosystems and the restoration of destroyed ones.

In addition, the EU is focused on assuming the role of a world leader with regard to the protection of biodiversity, which means that, in the event that intensive actions are taken by other countries of the world, the biodiversity protection policy may be more advanced.

The targets for 2030 are to be implemented through the two pillars of action. Firstly, work with regard to a coherent network of protected areas will be continued and, secondly, actions will be taken to develop an ambitious EU plan to restore natural resources.

As indicated above, the network of protected areas (Natura 2000) has been built for a long time and has also been constantly present in the agricultural policy. However, over the next ten years, it is to be expanded to 30% of the European Union's land and sea area. Of this, about 10% of the areas are to be strictly protected, including all areas with old-growth forests. In addition, even more attention than before is to be paid to the construction of corridors connecting individual areas within the Natura 2000 network and to the quality of management of various types of valuable natural areas.

In terms of ambitious actions to restore natural resources, ten areas of action have been identified, two of which apply directly to agriculture, i.e., "Bringing nature back to agricultural land" and "Solving the issue of agricultural land use and restoring soil ecosystems". Moreover, the issue of agriculture may also be seen in other areas, e.g., those related to the production of energy and reduction in pollution.

In the context of agriculture, it can be concluded that the Biodiversity Strategy does not differ much from the Farm to Fork Strategy. Both contain a very similar set of actions aimed at limiting and restoring biodiversity. These targets were mentioned in the previous part of the paper, so there is no need to repeat them. The only significant difference is an additional provision which can be observed in the Biodiversity Strategy and which sets out the need to maintain at least 10% of agricultural area containing highly diverse landscape elements. These are, *inter alia*, buffer zones subject or not subject to crop rotation, fallow lands, hedges, non-productive

trees, terrace walls, ponds, etc. Their value consists in absorbing carbon dioxide, preventing soil erosion and depletion, filtering the air and water, and supporting the processes of adapting to climate change.

It is not yet known how EU-wide targets are going to translate into actions in individual Member States, but given their ambitious nature, it can be assumed that many of them will be a significant challenge for agriculture in Poland. For example, as a very difficult, maybe even the most difficult, challenge, we can consider the target consisting in allocating 25% of the European Union's agricultural area for organic farming. Certainly, in the case of Poland, this target will be adapted to the possibilities, i.e., significantly reduced, but still it will be an ambitious challenge. In view of the existing trends, i.e., the number and area of organic farms in Poland decreasing since 2014, it seems that achieving this target may be difficult for Polish agriculture.

The changes will create both new opportunities and challenges. It seems that the latter will predominate in the next decade, and a fundamental problem may be a change in thinking about the environment and nature in the context of the activities pursued. As long as no belief in the benefits of the protection of biodiversity exists in the social consciousness, a belief in the dominant role of costs in the actions taken will prevail. However, this change requires incorporating the value of biodiversity into the economic calculation.

Ad. c) The climate targets adopted for the coming years should undoubtedly be considered ambitious. The European Commission seeks to achieve climate neutrality by 2050 (European Commission, 2018). The implementation of this objective requires preparing a long-term strategy and European "climate law", as well as adapting EU policies to achieve climate neutrality, while taking into account the role of individual sectors. The first steps in this regard have already been taken, e.g., a proposal for climate regulation has been drawn up (European Commission, 2020c), however, due to the complexity of the issue, the whole process of modifying strategic papers has been extended to the end of the first half of 2021.

The climate targets include a reduction in greenhouse gas emissions by at least 50%, and potentially 55% compared to 1990 levels; this is an EU target for 2030. The achievement of this target requires that a review be carried out of all the important climate-related policy instruments and that the relevant changes be made. "This [review] will comprise the Emissions Trading System³ (ETS), including a possible extension of European emissions trading to new sectors, Member State targets to reduce emissions in sectors outside the Emissions Trading System⁴, and the regula-

³ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, European Union Official Journal, L 275/32, 25.10.2003.

⁴ Regulation of the European Parliament and of the Council (EU) 2018/842 of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (Text with EEA relevance), European Union Official Journal, L 156/26, 19.6.2018.

tion on land use, land use change and forestry”⁵ (European Commission, 2019b). Such actions will form the basis for developing a mechanism of setting fees for greenhouse gas emissions across the economy. In the event of any differences between the EU and other countries’ policies, a border carbon adjustment mechanism is planned, taking into account CO₂ emissions in selected sectors in order to reduce the risk of carbon leakage. The climate targets will also be achieved by adapting the tax system, including the taxation of energy.⁶

An important element of the European Green Deal is the European Climate Pact, which focuses on three ways of involving society in climate actions. The first is to encourage the exchange of information about the risks and challenges related to climate change and environmental degradation, and their potential solutions. The second is to create real and virtual opportunities for expressing views and carrying out joint actions. Thirdly, the EC points to support for grassroots climate and environmental initiatives.

Ad. d) Decarbonization of the energy system is crucial to achieving climate targets, as around 75% of EU greenhouse gas emissions come from the production and use of energy in the economy. Hence, EU actions will seek to create an energy sector largely based on renewable sources, while giving up the use of coal and decarbonizing the gas sector.⁷ The implementation of these objectives requires the involvement of the individual Member States in preparing national, ambitious plans for the use of various energy sources. Of key importance will be an increase in the production of offshore wind energy. Concurrently, actions will be taken to help decarbonize the gas sector, including by increasing aid for development work in the field of low-carbon gases and by solving the problem of energy-related methane emissions.

Building and renovating in an energy- and resource-efficient manner is extremely important, as buildings are responsible for 40% of energy consumption, and the annual building renovation rate is only 0.4 to 1.2%, depending on the Member State. Achieving the EU’s energy efficiency and climate targets requires at least a twofold increase in this rate, which points to a need to increase renovations so as to reduce energy costs and energy poverty.

⁵ Regulation of the European Parliament and of the Council (EU) 2018/841 of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (Text with EEA relevance), European Union Official Journal L 156/1, 19.6.2018.

⁶ Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (Text with EEA relevance), European Union Official Journal, L 283/51, 31.10.2003.

⁷ Regulation of the European Parliament and of the Council (EU) 2018/1999 of 11 December 2018 on the governance of the energy union and climate action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance), European Union Official Journal L 328/1, 21.12.2018.

Ad. e) Striving for a zero-pollution ambition for a toxic-free environment is also an important EC initiative included in the European Green Deal strategy. As part of the actions, the EC included a need to effectively monitor the pollution of the air, water, soil, and consumer products, as well as to restore the natural functions of surface waters and groundwater. In this area, the protection of citizens and the environment from hazardous chemicals is particularly important. Agriculture will also play an important role in this regard as a result of creating environmental pressure associated with the use of industrial agricultural chemicals.

Ad. f) The achievement of ambitious climate targets requires modifying the industrial sector and implementing solutions appropriate to the circular economy. EU industry is responsible for 20% of greenhouse gas emissions in the EU. Industry depends on the processing of new raw materials that are extracted and processed. From 1970 to 2017, the annual global extraction of raw materials tripled (International Resource Panel, 2019) and only 12% of materials used in industry come from recycling (Eurostat, 2020). The European Green Deal will support the transition of EU industry to a sustainable growth model. The circular economy action plan will include a policy of “sustainable products”. Reducing the consumption of materials and reusing them before recycling has been adopted as a priority. The Commission seeks to make all packaging in the EU market reusable or recyclable by 2030. The circular economy action plan will also include measures aimed at encouraging companies to offer reusable products.

Ad. g) The EC’s actions also apply to transport, which is responsible for 25% of greenhouse gas emissions in the EU. Therefore, in order to achieve climate neutrality, it will be necessary to reduce emissions in the transport sector by as much as 90% by 2050. A special role is played by railways and inland waterways. The solutions developed by the EC will take into account, inter alia, the price of transport, which should reflect its environmental and health impact, the liquidation of subsidies for fossil fuels, the development of production and the introduction of alternative⁸, sustainable transport fuels. The EC estimates that by 2025, it will be required to have in place about 1 million public charging and refuelling stations to serve 13 million zero- and low-emission road vehicles. All these actions are aimed at significantly reducing the level of pollutants generated by transport, especially in cities.

Ad. h) An integral part of the European Green Deal strategy is to include the issue of sustainable development in all EU policies, which should cover:

– Supporting green financing and green investments, and ensuring just transition

“The achievement of the targets presented in the European Green Deal requires significant capital expenditure. The Commission estimates that in order to meet the climate and energy targets for the period up to 2030, additional investments amounting to EUR 260 billion a year⁹, i.e., about 1.5% of GDP in 2018, will be

⁸ Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (Text with EEA relevance), European Union Official Journal L 307/1, 28.10.2014.

⁹ After: (European Commission, 2019c).

necessary”¹⁰. These actions have been announced, inter alia, in the Recovery Plan for Europe, which was declared on 21 July 2020 (European Council, 2020b).

– Greening of national budgets and ensuring adequate price signals

The EC will cooperate with the Member States to monitor and model practices with regard to the green planning of the budget, which will make it easier to assess the inclusion of environmental issues. As part of these actions, the conditions for tax reforms and for the abolition of subsidies for fossil fuels will be determined. The updated guidelines will also facilitate the withdrawal of fossil fuels, in particular those that pollute the environment most.

– Mobilizing research and fostering innovation

The measures available under the Horizon Europe program will support research and innovation contributing to the implementation of the Green Deal Strategy. At least 35% of Horizon Europe’s budget will be allocated for financing new climate solutions. The Horizon Europe program will also involve local communities in actions for a more sustainable future.

– Activating education and training

The Commission will prepare a “European competence framework” to help develop and assess knowledge, skills, and attitudes in the field of climate change and sustainable development, and will also facilitate the exchange of good practices under the EU networks of teacher training programs.

– Green promise: “Do no harm”

In line with the intention of the EC policy-makers, all EU actions and policies should be combined, and the tools for better law-making, as developed by the Commission, form a solid basis for this process.

CAP post-2020 – a new green architecture

The Common Agricultural Policy adapts to the new challenges facing European agriculture. The European Commission proposes modifications at the EU and Member State levels which are both formal (administrative) and substantive (European Council, 2020a). In the former case, it is for the Commission to establish: a) a set of general objectives for the CAP as a whole; b) a set of intervention tools to allow the Member States to achieve the objectives of the CAP; c) a common set of indicators to assess the effectiveness of the measures applied in a comparable manner.

¹⁰ The Commission will submit a Sustainable Europe Investment Plan to help meet additional financing needs. (...) The EU budget will play a significant role. The Commission proposed a target according to which 25% of funds under all EU programs should be allocated for issues related to climate change. (...) At least 30% of the InvestEU Fund’s resources will be allocated for fighting against climate change (...) As part of the Sustainable Europe Investment Plan, the Commission will propose a just transition mechanism covering the Just Transition Fund. (...) The private sector will be key to financing the green transition. After: (European Commission2019b).

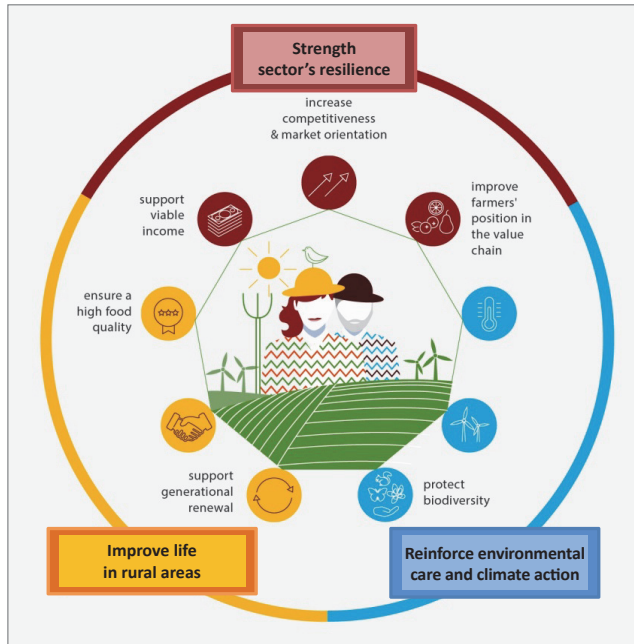


Fig. 2. Future of the CAP.

Source: <https://www.consilium.europa.eu/pl/infographics/cap-reform-objectives/>

On the other hand, the individual countries, based on national needs, are responsible for selecting specific interventions which they find to be the most effective in achieving the specific objectives. With regard to the Member States, the Commission expects: a) development of a strategic plan, based on the identified needs of the country concerned, which must be approved by the Commission; b) indication of a method of using financial resources to meet the identified needs, together with the tools and objectives applied; c) preparation of reports indicating the progress in achieving the objectives adopted.

With regard to the substantive issues, the Commission adopts greater environmental and climate ambitions. What was proposed was a new “green” structure based on the environmental and climate conditions and taking into account additional voluntary actions under both pillars of the CAP (Figure 3).

These ambitions will translate into new commitments and incentives for farmers, including the following practices and actions:

- taking care of carbon-rich soils through the protection of wetlands and peatlands;
- introducing an obligatory nutrient management tool to improve the quality of water, and reduce the levels of ammonia and nitrous oxide;
- using crop rotation instead of crop diversification;
- introducing eco-schemes by the EU countries to support or encourage farmers to comply with agricultural climate- and environmentally friendly practices which go beyond the basic requirements.

Bcovers the first pillar of the CAP, which takes into account the new enhanced conditionality and climate and environmental systems, the so-called eco-schemes, as well as the second pillar where climate and environmental actions remain (Figure 3), (Department of Direct Payments, MARD, 2019).

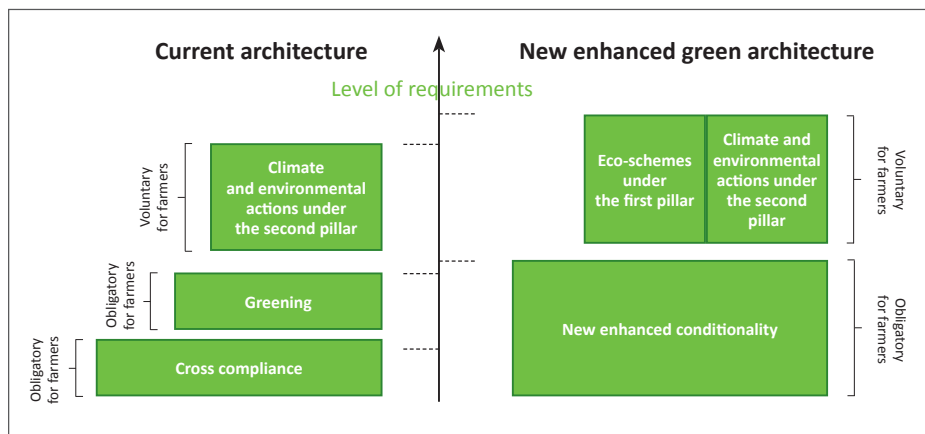


Fig. 3. Current and new green architecture of the CAP.

Source: Department of Direct Payments, MARD, 2019.

The new conditionality system combines the current requirements for greening and cross-compliance (which includes the standards of good agricultural and environmental conditions, the so-called GAEC standards, and statutory management requirements, i.e., SMR requirements) and makes the receipt of full financial support under the CAP conditional on beneficiaries ensuring that agricultural practices are in line with the basic standards related to the environment, climate change, public health, animal health, plant health, and animal welfare. All CAP beneficiaries will be required to comply with these standards and requirements. The scope of the new conditionality system will provide a basis for specifying requirements for additionally paid, voluntary measures such as eco-schemes or agri-environment-climate measures.

The new enhanced conditionality also includes the GAEC standards that have not been applicable so far or were applicable to a smaller extent, namely:

- GAEC 2: adequate protection of wetlands and peatlands; concerns the prohibition of converting and plowing permanent grassland in these areas;
- GAEC 5: the use of a sustainable nutrient management tool, the so-called FaST (*Farm Sustainability Tool for Nutrients*);
- GAEC 7: ensuring a plant cover for the soil in the most sensitive period; applies to arable land from 1 November to 15 February and the soil protective cover may be: mulch, crop residues, stubble, winter crops, perennial plants with plant cover or mulch in inter-rows;

- GAEC 8: application of crop rotation; according to this requirement, crops such as barley, oat, wheat, rye, triticale, and rapeseed are grown on the same parcel of land for no more than 3 years, while maize – for no more than 2 years.
- GAEC 9: it is meant to modify the existing EFA (*Ecological Focus Area*) practice concerning the allocation of a minimum share of agricultural area, which includes both elements relevant to the landscape and non-productive areas.

In addition to the new enhanced conditionality, the first pillar of the CAP also includes climate and environmental systems, the so-called “eco-schemes” (Department of Direct Payments, MARD, 2020). It is a new CAP measure to be obligatorily implemented by each Member State, but it is voluntary for farmers who want to apply additional environmental practices going beyond the obligatory requirements included in the rules of the new enhanced conditionality. Support under eco-schemes will be linked to the implementation of the annual commitment, taking into account the area in which they are implemented. This support will be a form of additional payment to the basic income support or a payment constituting compensation for some or all additional costs incurred and income foregone. At this stage, 15 types of practices under eco-schemes are proposed, namely:

- Undersown crops – objective: to improve the quality of soils (reducing erosion, preventing the excessive drying of soils, increasing the amount of organic matter) by sowing grasses or fine-grained legumes (including mixtures of grasses with fine-grained legumes and mixtures of fine-grained legumes) into the main crop.
- Winter catch crops – objective: to improve the quality of soils (enriching the soil with organic matter and nutrients, reducing erosion).
- Areas with melliferous plants – objective: to strengthen biodiversity.
- Additional payment for permanent grassland with stocking density: extensive grazing – objectives: supporting agricultural income, preventing the disappearance of agricultural ecosystems, maintaining the production potential of agriculture and economic activity in rural areas, preserving biodiversity and natural diversity.
- Development of and compliance with the fertilization plan – objective: to rationalize fertilization taking into account the needs of crops, which will reduce the emission of nitrogen oxides into the atmosphere and prevent the introduction of excessive amounts of fertilizers into the soil, reduce their leaching and penetration into waters. This practice requires the development of and compliance with a fertilizer plan based on nitrogen balance and on the chemical soil analysis specifying the doses of N, P, K, Mg, and the need for liming.
- Cultivated strips free of plant protection products and fertilizers on parcels >5 ha – objective: to preserve cultivation strips free of plant protection products and fertilizers (excluding solid natural fertilizers) in order to restore the natural properties of the soil.

- Favorable structure of crops – objective: to prevent the loss of soil organic matter, to improve the nutrient content of soils, to increase the water capacity of soils. It is planned to allocate 30% of arable land for the cultivation of plant species having a positive impact on the soil organic matter balance, i.e., those that reproduce soil organic matter, e.g., clover, alfalfa, sainfoin, goat's rue, grasses, mixtures of grasses with legumes.
- Simplified tillage systems – objective: to prevent erosion and drying of soils, to preserve the natural structure of the soil. Simplified tillage systems include: conservation no-plough tillage with mulching, reduced tillage, strip tillage, and zero tillage.
- Integrated plant production (IPP) – objective: to reduce fertilization and use of plant protection products. The IPP methodologies specify, inter alia, crop rotation, selection of varieties, method of preparation, soil tillage, sowing method, plant protection, fertilization (dates, doses). The IPP is subject to certification and the product is recognizable in the market.
- Liming – objective: to support regeneration activities for acidified soils. Liming should be applied on acidified soils (in the form of lime for fertilization or liming material), no more frequently than every 4 years. The need to lime an agricultural parcel should result from an opinion issued by the District Chemical and Agricultural Centre on the recommended dose of CaO or CaO and MgO.
- Incorporation of manure within 12 hours – objective: to minimize ammonia losses during and after the application of manure, by shortening the duration of its presence on the surface of the field.
- Spreading of slurry using methods other than the splash method – objective: to minimize ammonia losses by spreading slurry on arable land using methods other than the splash method, with applicators equipped with disc harrows or application into the soil with the use of skid-mounted septic tankers.
- Subsurface application of urea-based fertilizers – objective: to minimize ammonia losses by reducing the contact of urea-based mineral fertilizer with the air, immediate mixing of urea with the soil, applying urea with the simultaneous sowing of seeds, and using delayed-action nitrogen fertilizers, i.e., coated fertilizers, either with a urease inhibitor, or with a nitrification inhibitor.
- Biodiversity – objective: to improve biodiversity. Keeping areas conducive to biodiversity, e.g., bodies of water, individual trees and their groups, field margins, etc. (non-productive elements declared to the EFA) at a level higher than that required under GAEC 9.
- Buffer zones along surface waters – objective: to protect waters from pollution. The eco-scheme is dedicated to arable land and includes sowing of grasses and legumes (especially clover and alfalfa) as well as the obligation to preserve existing trees and shrubs. The width of the zone should be 10 or 20 m, depending on the type of surface waters.

In addition to the first pillar of the CAP, the second pillar of the CAP includes climate and environmental actions, which are obligatory for implementation by the Member State. The following initiatives will be included under this pillar (Department of Direct Payments, MARD, 2019):

- Agri-environment-climate commitments, characterized by desirable agricultural practices going beyond the scope of the new mutual conditionality as well as eco-schemes (example shown in Table 1).
- Natura 2000 payments – payment for compliance with the practices resulting from the Habitats and Birds Directive, going beyond the standards of good agricultural and environmental conditions (GAEC) as well as the conditions laid down with regard to the maintenance of agricultural area.
- WFD payments – payment for compliance with the practices resulting from the Water Framework Directive (WFD) going beyond the standards of good agricultural and environmental conditions (GAEC), additional management requirements (i.e., SMR requirements, except for SMR 1) and the conditions laid down with regard to the maintenance of agricultural area.
- Forest actions – may apply to interventions in the field of: development of forest areas and sustainable forest management, including the afforestation of land and creation and renewal of agroforestry systems; as well as the protection, restoration, and improvement of forest resources, taking into account adaptation needs; investments to guarantee and improve forest protection and resilience, as well as to provide services in the field of forest ecosystems and climate; measures and investments supporting renewable energy sources and the bioeconomy.
- Payments due to natural or other specific constraints (LFA).

Table 1

Examples of green architecture

GAEC 9 – standards of the new enhanced conditionality	Pillar I: Eco-schemes	Pillar II: agri-environment-climate commitments
Allocation of at least 5% of agricultural area for hedges, lines of trees, field copses, bodies of water or fallow land	Eco-scheme, version 1: Allocation of at least 7% of agricultural area for hedges, lines of trees, field copses, field margins, bodies of water or fallow land	Prohibition on the use of fertilizers and pesticides in a strip of 2 m along or around: hedges, lines of trees, field copses, field margins, bodies of water or fallow land
	Eco-scheme, version 2: Allocation of at least 10% of agricultural area for hedges, lines of trees, field copses, field margins, bodies of water or fallow land	Proper management of the above-mentioned elements (e.g., establishing field margins with flowers)

Source: Department of Direct Payments, MARD, 2019.

Challenges related to the implementation of the European Green Deal Strategy

The implementation of the European Green Deal strategy entails many challenges to be faced by EC policy-makers, and then by the individual EU Member States, as well as society. The following four main groups of challenges can be identified:

- The substantive challenge related to the ambitious targets of the European Green Deal strategy

In the 20th century, the EU started to modernize and transform the European economy in order to achieve climate neutrality. Between 1990 and 2018, greenhouse gas emissions were reduced by 23%, accompanied by a 61% growth in the economy. According to EC estimates, the existing policy would guarantee only a 60% reduction in greenhouse gas emissions by 2050 (European Commission, 2019b), which justified the need to adopt more ambitious climate targets. At present, achieving an additional planned reduction in emissions is a major challenge for the whole economy, including its individual sectors. The ambitious European targets adopted also entail a greater risk of failure to achieve them. Nevertheless, the state of the natural environment and climate change have intensified the need for international institutions to seek radical solutions.

Particularly difficult tasks may include: climate-based taxation (requires a number of interdisciplinary studies aimed at evaluating various climate-friendly actions as well as practices destabilizing the climate); development of common ambitious climate targets by the EU and by other countries of the world (requires international agreements, adoption of primary objectives); improvement in energy efficiency through the use of new technologies based on renewable raw materials (the problem of the coal-based economy); achieving a climate-neutral circular economy (requires complex research and the implementation of technologies allowing for the reuse of raw materials) and the restoration of biodiversity. The EU should also promote the necessary digital transformation and its tools and make investments in this area, as these are of primary importance in making changes happen.

Administrative and legal challenges related to the adaptation of institutions and regulations at the European and national levels, as well as the development of internally coherent national strategic plans corresponding to the European framework

In addition to a number of procedures to be carried out by European institutions, it is necessary to involve the individual Member States jointly and severally. The Member States should seek to guarantee the coherent use of all available planning tools within the framework of the European Green Deal. The most important of them are national energy and climate plans and proposed strategic national plans regarding the implementation of the Common Agricultural Policy. In line with the accepted rules, the EC will verify the adequacy of the plans drawn up against the European targets set, followed by the effectiveness of their imple-

mentation. It is the responsibility of both the Commission and the Member States to enforce and achieve measurable outcomes set out in policy strategies and national plans. In view of the above, a review of the implementation of the environmental policy is planned, which will play a key role in mapping out the situation in each Member State.

– Global challenges vs. European measures

The problem of environmental protection and climate change is not only a European problem, but a global one, and this points to a need to look for global solutions. Given the fact that the EU is responsible for the decreasing percentage of global emissions (European Commission, 2019b), comparable actions in other non-European regions will be crucial to addressing global challenges related to changes in natural environmental and climate in real terms. The causes of climate change and the loss of biodiversity are global and cross-border.

The ecological transformation planned as part of the implementation of the European Green Deal strategy will change the geopolitical situation, including global economic and trade interests, while creating challenges for states and societies. According to the plans, the EU will cooperate with various partners to increase resilience to climate change and to protect the environment. The reason for this cooperation is the prevention of potential conflicts or forced migration of the population, as well as a reduction in the risk associated with the problem of food security. Thus, the EU environmental and climate policy becomes an integral part of the common security policy.

– Financial challenges

Ambitious targets require developing ambitious solutions, which in turn entail the need to incur adequate costs. The question arises as to who should incur these costs, since resources such as the environment and a stable climate are common-pool resources. The limited budgets of international institutions and states make it necessary to search for optimal solutions and the diversified participation of various entities in incurring these costs.

As the EC points out, enormous public investments and greater efforts will be needed to redirect private capital to climate and environmental actions. The EU must play a leading role in coordinating international actions aimed at building a coherent financial system which supports sustainable solutions. This initiative also forms a solid basis for establishing a new sustainable and inclusive growth strategy in Europe.

– Social challenges

The effectiveness of political actions depends on their public acceptance. This is particularly visible in the case of environmental problems. On the one hand, we can see an increased perception of these problems in societies, on the other hand – willingness to incur expenses related to their prevention is still low. For example, climate challenges are more often present in social consciousness than those related to the protection of biodiversity, or the more rational use of fertilizers. Regardless of

the problem, we can observe the dominance of the free-rider strategy, i.e., looking to others and trying to place the burden of remedial actions on their shoulders. An additional problem is the elusive nature of environmental actions, i.e., the absence of a visible effect, especially in the short term. These factors, along with the lack of adequate knowledge, mean that social acceptance of changes in the agricultural policy, i.e., of an increased emphasis on preventing environmental problems, in combination with reducing subsidies for production, is low.

As a result, an effective policy for implementing the European Green Deal must take into account the need to intensify education on risks, ways to prevent them, and the usefulness of the initiatives taken. Partially, at the Community level, this role is played by information on the costs of abandoning the European Green Deal, but this is not visible enough in the discussion on this concept.

Conclusion

The global challenges related to climate change and the degradation of the natural environment require global actions. In accordance with the objectives under the new CAP, the EU will pursue an ambitious environmental and climate policy, including the implementation of solutions aimed at the sustainable development of agriculture. The European Green Deal initiates a new EU strategy for the protection of common-pool resources.

The European Green Deal represents a new quality in the area of creating development policy. This document introduced a holistic, balanced approach that takes into account economic development, social needs, and the protection of the environment. This attitude has already been present in previous European Union documents, e.g., the Europe 2020 strategy, however, we can observe an increase in the integrated approach to development and an emphasis on environmental problems. This is a step towards building a new knowledge-based civilization that comprehensively addresses the challenges facing humanity.

The actions taken by the European Commission should be assessed positively as they oblige the Member States to be more active in protecting the natural environment and the climate. Without real actions at the high administrative and Community level, it is not possible to develop solutions to the growing environmental and climate problems. In order to achieve the desired results, we need a joint and several approach to developing practical and systemic solutions which, on the one hand, would allow for a reduction in the external costs resulting from human economic activities and, on the other hand, would prevent unfavorable changes by generating positive externalities.

The objectives set out in the European strategy should be considered both ambitious and necessary. Despite potential future difficulties in achieving them, it is essential to create solutions that improve the current state, moving in the intended direction, i.e., towards sustainable development. Regardless of the scope of implementing the Green Deal concept in Europe, it should result in improving the state of the environment and contribute to climate stabilization. However, it is worth re-

membering that the 2030 targets are only one of the stages of striving for a sustainable, low-carbon, and environmentally friendly economy. We can expect further intensification of actions in this direction in the coming decades.

The European Green Deal strategy should contribute to accelerating changes in agriculture in the intended direction, i.e., on the one hand, to intensifying actions towards achieving the planned targets and, on the other hand, to mitigating the negative effects – the external costs of these economic processes, which will advance due to market and global conditions. An important issue is raising the ecological awareness of society, including farmers, and promoting desirable environmental and climate actions, to achieve the expected economy of scale. Given the significant fragmentation of agriculture in Poland, it is particularly important to implement appropriate agricultural practices on as many farms as possible.

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ROLNICTWO A EUROPEJSKI ZIELONY ŁAD

Abstrakt

Narastające problemy środowiskowe oraz klimatyczne wymuszają poszukiwanie efektywnych rozwiązań w działalności gospodarczej, w tym także w rolnictwie. Duże znaczenie w tym zakresie przypisane jest popularyzacji odpowiednich praktyk i technik produkcyjnych. Kierunek rozwoju rolnictwa europejskiego ma szczególne znaczenie dla rozwiązania problemów środowiskowych i klimatycznych. Od lat realizowane są strategie czy też programy zrównoważonego rozwoju, które mimo zainicjowania pożądanego kierunku zmian w rolnictwie, nadal są niewystarczające względem dostrzeganych potrzeb. W grudniu 2019 r. Komisja Europejskiej wydała komunikat poświęcony strategii Europejskiego Zielonego Ładu, który miał zapoczątkować kolejne działania międzynarodowe w celu osiągnięcia ambitnych celów klimatycznych i środowiskowych.

Celem artykułu jest przedstawienie głównych kwestii związanych z wdrażaniem strategii Europejskiego Zielonego Ładu oraz wskazanie kluczowych wyzwań dla sektora rolnego. W badaniu posłużono się przeglądem literatury oraz aktów prawnych.

Wyniki wskazały na zasadność poszukiwania kolejnych rozwiązań gospodarczych spójnych ze strategią Europejskiego Zielonego Ładu. Cele zawarte w Europejskim Zielonym Ładzie są bardzo ambitne i będą wymagały złożonego, wielowątkowego podejścia do polityki rolnej oraz zmiany nastawienia rolników, tj. większego uwzględnienia pozaprodukcyjnych aspektów prowadzonej działalności, w szczególności w zakresie ochrony środowiska. Jednocześnie Europejski Zielony Ład należy oceniać w znacznie szerszym zakresie niż tylko w kontekście wymogów środowiskowych. Holistyczny charakter tego dokumentu powoduje, że jest on krokiem w kierunku budowy nowej gospodarki uwzględniającej szerokie, również pozagospodarcze konsekwencje podejmowanych działań.

Słowa kluczowe: rolnictwo, Europejski Zielony Ład, środowisko przyrodnicze, klimat.

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