

**“FARM TO FORK” STRATEGY
AND ITS IMPLICATIONS FOR THE DEVELOPMENT
OF THE BEEF PRODUCTION SECTOR IN POLAND**

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Abstract

The article deals with the “Farm to Fork” Strategy, which is the European Union document significant for the future of the Common Agricultural Policy and the effects of its implementation for the beef sector in Poland, as well as an important element of agri-food exports. The analysis uses a “desk research” study to consider the EU legal acts and strategic documents (including CAP Strategic Plan), as well as documents of Eurostat, international organizations (FAO, OECD), and industry organizations. The analysis was performed using an expert method. The study was limited to four groups of issues: greenhouse gas emissions, eco-schemes, antibiotics, and animal welfare. It was concluded that the actions specified in the strategy aimed at considering external costs of food production (particularly health and environmental) would inevitably result in an increase in its prices, because, according to the analyses, the costs even exceed the market value of food. So far, they have been covered by taxpayers, consumers, and other entities. In this situation, according to the Commission, it seems justified to gradually abandon the cheap food policy, which is justified in poorer countries.

Keywords: EU agricultural development strategies, Common Agricultural Policy, beef production, animal welfare.

JEL codes: Q01, Q18, Q54.

Introduction

The beef production sector in Poland has had a long tradition and plays an important role in economic, social, and environmental terms. It is also an element of the food security policy. The share of live cattle (including veal) in agricultural

market output amounted to 7.4% in 2019 (Statistics Poland, 2020). Beef production is of great economic importance due to exports (about 80% of the total domestic beef production (PAP, 2019). Beef export alone accounts for about 5% of all Polish agri-food exports (*Ministry of Agriculture...*, 2018). By-products can be used as natural fertilizers or in the leather industry. Cattle farming enables a sustainable meadow and pasture management that creates valuable ecosystems. The sector's social importance results from the fact that the production of cattle livestock is a source of income for agricultural producers, and the meat industry and service enterprises create numerous jobs.

Poland has a significant potential of cattle rearing, which is determined both by soil and climatic factors, as well as large resources of production factors. Consequently, Poland is the sixth producer of beef in the EU. Beef production in Poland increased from 386 thousand tonnes in 2010 to 560 thousand tonnes in 2019 (Statistics Poland, 2020), which is a result similar to that of Ireland. In 2020 and 2021, beef production is to be almost identical (IAFE-NRI, 2020b). The meat industry belongs to the modern sectors of the national agri-food economy.

Polish beef is price competitive on the EU market (IAFE-NRI, 2020b). Due to the significant share of exports in production, the sector depends on the situation on international markets. The sector may be affected by the presence of certain bovine diseases (e.g., BSE, bluetongue, lumpy skin disease). The presence of certain diseases may limit access to third country markets. The ban on ritual slaughter may be a threat to the sector, and some countries purchase only this type of product and require a certification system (e.g., HALAL). Opportunities for the development of the beef sector may include an increase in domestic consumption, as well as an increase in exports to the EU market and to third countries. The growing demand for beef in the world is a prospect for this sector (NCBA, 2021).

The aim of the article is to determine what actions, in the light of strategic EU documents, should be taken by Polish beef producers to meet the new challenges.

When looking for theoretical foundations for the research undertaken in this study, it is necessary to point to the contemporary theories of food consumer behavior (Sobczyk, 2018), sustainable¹ and green development², the concept of "One Health"³, just to name the most useful.

¹ In terms of sustainable development, economists strive to guarantee sufficient economic, ecological, and socio-cultural standards, as well as freedom and life quality for all people living today and for future generations. However, the theory of these three pillars is permissible only within the framework of ecological protective barriers within the limits of nature's tolerance (Midor, 2012, p. 59).

² Green economy is the specification and operationalization of sustainable development (Kulyk and Gąsiorek-Kowalewicz, 2018, p. 197).

³ According to the WHO, it is an approach to the design and implementation of programs, public policies, legislation, and research in which multiple sectors communicate and collaborate to achieve better public health outcomes. The areas of work, in which the *One Health* approach is particularly relevant, include food safety, control of zoonoses (diseases that can spread between animals and humans, such as the flu, rabies, and Rift Valley fever), as well as combating resistance to antibiotics (in the case of bacterial mutations, bacteria become more difficult to treat after exposure to antibiotics) (Konieczny, 2018, p. 1).

The conducted analysis is a “desk research” study aimed at considering the EU legal acts and strategic documents (including the CAP Strategic Plan), as well as industry documents (including the Polish Association of Beef Cattle Producers). The study uses factual and statistical information from the Ministry of Agriculture and Rural Development, the European Commission, the European Parliament, Eurostat, international organizations (FAO – which closely cooperates with the EU also in the beef sector and OECD) and industry organizations. The methodological approach used in the study is primarily based on expert assessments.

“Farm to Fork” Strategy

The National Strategic Plan is the basic document of the Common Agricultural Policy (CAP), which Poland and other EU countries are to develop for 2023-2027⁴. It is a tool for achieving the 9 objectives of the new CAP. The construction of the plan and its approval by the EU institutions is a condition for obtaining CAP funds in the current financial perspective.

To provide material for the construction of the document and indicate its necessary content, the European Commission presented the assumptions of the EU “Farm to Fork” Strategy and the Biodiversity Strategy (EC, 2020a). Both strategies, and especially the “Farm to Fork”, are directional documents supporting the preparation of a strategic plan. The goals adopted in the strategies should be considered very ambitious, they relate to the indicators achieved on average in the European Union.

On May 20, 2020, the European Commission (EC) presented a communication on the “Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system”, which is part of the implementation of the European Green Deal (European Green..., 2021). It presents the challenges faced by the EU agriculture and the directions in which it should follow. The EC puts great emphasis on ensuring sustainable food production, at the same time pointing out that to achieve it, farmers will have to change their production methods, using solutions that have the least environmental impact, based on new technologies, including digital ones.

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⁴ The first version of the document is dated December 2020, and on July 30, 2021, the Ministry of Agriculture and Rural Development announced the second version of the CAP strategic plan, containing the planned interventions and the amount of financial resources assigned to each of them (EC, 2018b)

of work, in which the One Health approach is particularly relevant, include food safety, control of zoonoses (diseases that can spread between animals and humans, such as the flu, rabies, and Rift Valley fever), as well as combating resistance to antibiotics (in the case of bacterial mutations, bacteria become more difficult to treat after exposure to antibiotics) (Konieczny, 2018).

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Producers will be required to provide environmental results better than the previous ones, increase the system's resilience to climate change, and reduce the use of chemicals (e.g., pesticides, fertilizers). According to the European Commission, the downward trend in genetic diversity should also be reversed, including by facilitating the use of traditional crop varieties and animal breeds (Ministry of Agriculture..., 2018).

The implementation of the approach presented in the above-mentioned strategies will certainly force many changes in the existing food production model and will be associated with specific costs of adapting to the new requirements. At the same time, adaptation to the new recommendations will have an impact on the price level of agri-food products paid by consumers.

The "Farm to Fork" Strategy is a new comprehensive approach showing how Europeans value a sustainable food economy. The implementation of the strategy is an opportunity to improve the lifestyle, health of societies, and the natural environment. Creating a favorable food environment that makes it easier to choose healthy and balanced diets, will bring benefits for the health and life quality of consumers and reduce the costs related to health protection for society. People are paying more and more attention to environmental, health, social, and ethical issues. Europeans have considerable knowledge of food safety issues. The most frequently reported concerns relate to antibiotics, hormones and steroids in meat, pesticides, environmental pollutants, and food additives (Oleksy, 2020).

The new EU budget perspective will involve higher intensity of activities in the field of biodiversity, climate protection and the environment. The changes may mean for farmers a reduction in the intensity of agricultural production, which is to be compensated by additional payments.

The enforcement of applicable legislation is of particular importance, in particular regarding environmental protection (including greenhouse gas emissions), the use of antibiotics, and animal welfare.

What is the most important in the strategy for beef producers?

- Need for reducing greenhouse gas emissions from animal diets;
- Market access facilitation for sustainable/innovative feed additives;
- 50% reduction in the total sales of antimicrobials for livestock by 2030;
- Revision of animal welfare legislation, considering the possibility of animal welfare labels;

- One of the sub-items of the strategy (2.4) is dedicated to promoting sustainable food consumption and facilitating the transition to a healthy and balanced diet. It says that “moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables will reduce not only the risk of life-threatening diseases, but also the environmental impact of the food system”. Therefore, we can expect a decline in beef consumption by 2030. According to OECD-FAO Agricultural Outlook 2021-2030, it will decline globally by 5%, but for example in China it will increase by 8% (OECD-FAO, p. 173). According to the same data, beef consumption in Europe will remain unchanged.

In the summer of 2021, two EU documents were published to complement the strategy. They were the “Fit for 55” published by the EC on July 14, 2021, i.e., a package of 13 detailed legislative proposals (EC, 2021b) of the European Green Deal and the report prepared by the JRC entitled “Modelling environmental and climate ambition in the agricultural sector with the CAPRI model” (Barreiro et al., 2021), for the first time presenting the effects of the European Green Deal on EU agriculture. While the first material is a typically political document and of little use in the following considerations (e.g., the beef sector is only marginally mentioned twice)⁵, the second study, which is analytical and constitutes a substitute for the so-called impact assessment is indeed useful. Some of the calculations from this report will be presented later in this article.

Greenhouse gases and feed additives

EU agriculture is one of the important economic sectors in the world that has reduced greenhouse gas emissions (by 20% since 1990)⁶. The climate law (EC, 2020d) sets the goal of a climate-neutral European Union by 2050. The “Farm to Fork” Strategy states that agriculture will make an appropriate contribution to this process.

The sequestration of carbon dioxide by farmers and foresters is an example of a new green business model. The use of agricultural practices that remove CO₂ (carbon dioxide) or other gases from the atmosphere or reduce emissions contributing to the achievement of the goal of climate neutrality should be rewarded under the CAP or other public or private initiatives (market for carbon dioxide emission allowances)⁷. Hence, the concept of the so-called climate pensions⁸ and corresponding payments.

⁵ The document (European Environmental ..., 2021) is a perfect material explaining the general provisions of “Fit to 55”.

⁶ From 543.25 million gigatons of carbon dioxide equivalent in 1990 to 438.99 million gigatons in 2017 (Eurostat, 2019).

⁷ Robust certification rules for the removal of carbon dioxide in agriculture and forestry are the first step in enabling payments to farmers and foresters for the carbon sequestration they provide. Member States could use the principles to design CAP payments according to carbon emissions absorbed. Moreover, private companies could also be interested in purchasing such certificates to support climate action, which would be an additional incentive (in addition to CAP payments) for farmers and foresters to sequester carbon dioxide (EC, 2020b).

⁸ In the quoted references to Polish agriculture, the climate pension is understood as follows: climate pension is the relative difference between the GHG emission balance among farms (types of crops, livestock farming) that are most climate-friendly and farms (types of crops, livestock farming) with the strongest negative impact on the climate. See, e.g., (Felli, 2014).

Livestock farming is responsible for 9% of human CO₂ emissions, 37% of CH₄ (methane) emissions and 65% of N₂O (nitrous oxide) emissions.⁹ Greenhouse gas emissions from cattle farming, according to OECD and FAO forecasts in Europe and North America, will decrease by 2030 (OECD-FAO, 2021). GHG emissions in Poland in various production areas in 2018 are shown in Figure 1.

Farmers should take advantage of the opportunity to reduce methane emissions from livestock farming by developing renewable energy production and investing in digesters to produce biogas from agricultural waste and residues such as manure¹⁰.

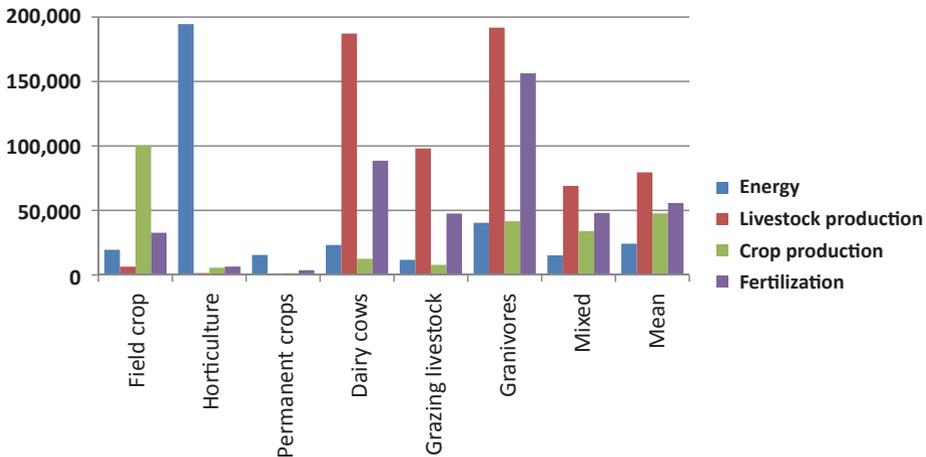


Fig. 1. GHG emission in Poland in various production areas in kg (2018).

Source: study based on data from FADN (IAFE-NRI, 2019)¹¹.

To contribute to the reduction of the environmental and climate impact of livestock production and to support the ongoing transition towards more sustainable livestock farming, the Commission aims at facilitating the marketing of sustainable and innovative feed additives. The Commission is also to examine the EU legislation to reduce the dependence of livestock farming on the availability of key feed materials (e.g., soybeans grown on deforested land) by promoting EU-produced plant proteins and alternative feed materials such as insects, marine feedstuffs (e.g., algae), and bioeconomy by-products (e.g., fish waste) (EC, 2018a).

⁹ (Beldowicz, 2021).

¹⁰ Each EU Member State should carry out an extensive analysis of its specific needs and on this basis will draw up a CAP Strategic Plan, which sets out how the funds from both pillars of the CAP will be used to meet the needs, while considering the overall EU objectives. It will also identify the tools it intends to use and its own end goals.

¹¹ The studies, however, did not consider the possibilities of GHG sequestration during agricultural activity, nor the differentiation of emissions related to different production technologies. Based only on the FADN data, the average level of annual GHG emissions in the case of the analyzed farms was determined at the level of 207 tonnes. However, the level of emissions is highly dependent on the type of farming and production area. The highest level was recorded in the case of farms of keeping granivores – more than 430 tons, while the lowest in the case of permanent crops, i.e., less than 21 tonnes.

Moreover, the Commission will review the EU programs for promotion of agricultural products with a view to increasing its contribution to the development of sustainable production and consumption and to changing diets (eating habits). Regarding meat, this review should focus on finding out how the EU can use its promotion program to support the most sustainable, low-emission methods of livestock production (EC, 2020b). An evaluation of coupled support applications in the CAP strategic plans is also foreseen, considering the need to ensure the overall sustainability of production.

Analyzing the above and the fact that the balance of ammonia emissions throughout the EU (Ministry of Climate..., 2021) is similar to that in Poland, our country, like other EU members, adopted Directive 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC (Official Journal, 2016) indicating reduction levels, inter alia, ammonia emissions for 2020-2029 and from 2030.

Eco-schemes

The new *eco-schemes* will offer farmers a major source of funding to stimulate sustainable practices that help reduce greenhouse gas emissions. The Commission will support the introduction of a separate minimum budget for this instrument.

The Ministry of Agriculture is working intensively on the shape of the CAP national strategic plan¹², in particular on the scope of new direct payments from the first pillar of the CAP, under the so-called *eco-schemes*. It is planned that the *eco-schemes* will be an annual payment for the implementation of practices beneficial for the environment and climate that go beyond the basic requirements and will be different from other obligations, e.g., agri-environment and climate. Joining them will be voluntary.

In programming direct payments, Member States have a difficult task, as they will have to estimate the number of hectares for individual payments and on this basis plan their unit rates.

Among the practices proposed as part of the *eco-schemes*, the following are distinguished:

- Extensive grazing on permanent grassland with livestock, where density of grazing livestock (cattle, goats, sheep, horses) is at least 0.3 LU/ha of permanent grassland¹³ and a maximum of 2 LU/ha of permanent grassland.
- Incorporation of manure within 12 hours of its application onto soil.

¹² The strategic plan is a document that will serve the implementation of the CAP for 2021-2027 and will include interventions in both pillars of this policy. The “Farm to Fork” Strategy is a directional document supporting the preparation of a plan. The CAP strategic plan includes a needs assessment based on a SWOT analysis, an intervention strategy which integrates the “Polish Beef” market development strategy and specific intervention measures.

¹³ LU, large inventory unit (Livestock Unit), TUZ – permanent grassland.

- Spreading slurry by methods other than splashing, soil application of urea-based fertilizers, which will minimize ammonia losses:
 - 1) shallow injection with the use of applicators equipped with disc coulters or
 - 2) application into soil using slurry tankers with skids.

For the farmer, the introduction of eco-schemes is linked with a necessity to make a rational decision. Such a decision must be based on an economic analysis of costs and benefits. The benefits are not only an additional payment, but also an improvement in the quality and structure of the soil and reduced production costs. Some eco-schemas may be related to investments. For example, simplified cultivation systems or the application of slurry into soil require specialized and expensive machines. In such a case, it is worth considering joint investments and the use of machines. The advantage may also be a higher price of agricultural produce sold by the farmer, e.g., for livestock grazed in the open pastures.

Pasture livestock production has developed in response to concerns (IFOAM EU, 2020) of the overuse of cereals and other concentrated feeds in the feeding of ruminants such as cattle and sheep. The aim is to provide environmental, health, and product quality benefits by focusing on feeding of grass or legumes. Voluntary pasture livestock certification schemes exist in some countries, for example the UK (www.pastureforlife.org), Austria (www.heumilch.com) and Germany (www.weidebeef.de). The standards focus primarily on the exclusion of cereals and other concentrates. They may also include the use of legumes to reduce the need for nitrogen fertilization and improve the nutritional value of the feed. This approach covers both rotational and permanent grasslands. The examples of such activities by farmers across Europe can be found on the website www.encyclopediapratis.eu, where examples of grazing farms participating in the Innograss¹⁴ project are described. Such benefits, however, depend on the cooperation of farmers with similar practices and the correct labeling of products. There are already quite large groups of consumers in Europe who are interested in sustainable food production methods and are ready to pay more if they are sure that what they buy contributes to climate protection, environmental protection, and animal welfare. The implementation of new direct payment systems should be preceded by very broad public consultations and supported by the agricultural advisory system (Molenda, 2020). The European Union will continue to develop the already functioning initiatives in this area¹⁵.

¹⁴ According to EIP-Agri Focus Group “Grazing for Carbon”, rotational grazing has a greater potential for carbon sequestration than continuous grazing systems as it creates organic matter in the soil. (Hennessy et al.).

¹⁵ For example, the Development Smart Innovation initiative through research in agriculture (EC, 2017).

Antibiotics

Since the discovery of penicillin in 1928, life-saving antimicrobial products have revolutionized society and the economy (Ministry of Agriculture..., 2019). Today, however, the benefits are mainly at risk due to the overuse or misuse of antimicrobial products, which has led to the spread of multi-drug-resistant bacteria. Resistance to antimicrobial products is a major challenge for the EU and the world. In November 2011, the European Commission launched the first five-year One Health action plan, designed to counter the growing risks related to antimicrobial resistance. The main objectives of the program include enhancing the prevention and control of antimicrobial resistance in the human, animal health, and food safety sectors to ensure the availability and improve the effectiveness of antimicrobial products.

To implement the guidelines established by the European Commission in the field of veterinary medicine, a national electronic system for reporting data on the volume of trade in veterinary medicinal products (VMPs) was established in Poland. Based on quarterly reports submitted by pharmaceutical wholesalers, annual reports on antimicrobial VMPs sales are generated and submitted to the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC). The analysis of ESVAC reports from 2011-2016 showed a 2% increase in the sales of antimicrobial VMPs for livestock in Poland in terms of the amount of active substance (mg) per PCU¹⁶. It should be emphasized that the quantities, however, have shown a downward trend since 2013.

The most frequently sold antibacterial VMPs used in the treatment of livestock in Poland from 2012-2016 were tetracyclines and penicillins, with tetracycline sales in 2016 accounting for 32% of the total sales of antimicrobial VMPs in Poland, and penicillins amounting to 28%. The least frequently sold group of active substances were cephalosporins, the sales of which accounted for only 0.46% of the total sales of antimicrobial VMPs.

Antimicrobial resistance related to the excessive and inappropriate use of antimicrobials in animal and human treatment leads to approximately 33,000 deaths each year in the EU and is associated with significant health care costs (EC, 2020b, p. 9). The Commission will therefore take action to reduce total EU sales of antimicrobials for farmed and aquaculture animals by 50% by 2030. The new regulations on veterinary medicinal products and medicated feed provide a wide range of measures to help achieve this goal.

A policy on Antimicrobial Resistance (AMR) has been established for animals from which meat is produced for human consumption. Any use of antimicrobials may result in the development of antibiotic resistance. Therefore, it is important for Denmark to use antimicrobials carefully. Denmark set a target in 2010 to reduce the use of AMR. Implementing the goal is based on the cooperation of stakeholders

¹⁶ PCU – Population Correction Unit is an indicator illustrating the actual consumption of medicines in livestock farming (Veterinary Medicines Directorate, 2016).

within the “One Health” approach. Denmark expects the “Farm to Fork” Strategy to include the setting of AMR thresholds (targets) for each Member State. This will allow for determining and implementing the EU limit. In Finland, the use of veterinary antimicrobials is very low. In the Netherlands, the use of antibiotics was reduced by 60% at farm level. This did not generate additional costs for most farmers, but required them to improve production management.

Welfare

Increasing animal welfare improves animal health and food quality, reduces the need for medicines, and can help to preserve biodiversity. It is also clear that the citizens want it. The Commission intends to review the animal welfare legislation, including the legislation on the transport and slaughter of animals, to bring them into line with the latest scientific knowledge, broaden their scope, facilitate enforcement, and ultimately ensure a higher level of animal welfare. The Commission will also consider animal welfare labeling options to better communicate data along the food chain (Animal Welfare..., 2020). The solutions are to be implemented through a five-year program.

The “Farm to Fork” Strategy also presents a schedule of non-legislative and legislative activities to be undertaken in the coming years (Table 1). As one can notice, two important tasks for the beef sector are only planned for the fourth quarter of 2021 (feed additives) and the fourth quarter of 2023 (evaluation of animal welfare legislation).

Table 1

“Farm to Fork” Strategy draft action plan

ACTIONS	Indicative timetable	No.
Proposal for a legislative framework for sustainable food systems	2023	1.
Develop a contingency plan for ensuring food supply and food security	Q4 2020	2.
Ensure sustainable food production		
Adopt recommendations to each Member State addressing the nine specific objectives of the Common Agricultural Policy (CAP), before the draft CAP strategic plans are formally submitted	Q4 2020	3.
Proposal for a revision of the Sustainable Use of Pesticides Directive to significantly reduce use, risk and dependency on pesticides and enhance Integrated Pest Management	Q1 2022	4.
Revision of the relevant implementing Regulations under the Plant Protection Products framework to facilitate marketing plant protection products containing biological active substances	Q4 2021	5.
Proposal for a revision of the pesticides statistics Regulation to overcome data gaps and reinforce evidence-based policy making	2023	6.
Evaluation and revision of the existing animal welfare legislation, including on animal transport and slaughter of animals	Q4 2023	7.
Proposal for a revision of the feed additives Regulation to reduce the environmental impact of livestock farming	Q4 2021	8.
Proposal for a revision the Farm Accountancy Data Network Regulation to transform it into a Farm Sustainability Data Network with a view to contribute to a wide uptake of sustainable farming practices	2022	9.
Clarification of the scope of competition rules in the TFEU with regard to sustainability in collective actions	Q3 2022	10.
Legislative initiatives to enhance cooperation of primary producers to support their position in the food chain and non-legislative initiatives to improve transparency	2021–2022	11.
EU carbon farming initiative	Q3 2021	12.
Stimulate sustainable food processing, wholesale, retail, hospitality and food services’ practices		
Initiative to improve the corporate governance framework, including A requirement for the food industry to integrate sustainability into corporate strategies	Q1 2021	13.
Develop an EU code and monitoring framework for responsible business and marketing conduct in the food supply chain	Q2 2021	14.
Launch initiatives to stimulate reformulation of processed foods, including the setting of maximum levels for certain nutrients	Q4 2021	15.
Set nutrient profiles to restrict promotion of foods high in salt, sugar and/ or fat	Q4 2022	16.

cont. Table 1.

Proposal for a revision of EU legislation on Food Contact Materials to improve food safety, ensure citizens' health and reduce the environmental footprint of the sector	Q4 2022	17.
Proposal for a revision of EU marketing standards for agricultural, fishery and aquaculture products to ensure the uptake and supply of sustainable products	2021-2022	18.
Enhance coordination to enforce single market rules and tackle Food Fraud, including by considering a reinforced use of OLAF's investigative capacities	2021-2022	19.
Promote sustainable food consumption, facilitating the shift towards healthy, sustainable diets		
Proposal for a harmonised mandatory front-of-pack nutrition labelling to enable consumers to make health conscious food choices	Q4 2022	20.
Proposal to require origin indication for certain products	Q4 2022	21.
Determine the best modalities for setting minimum mandatory criteria for sustainable food procurement to promote healthy and sustainable diets, including organic products, in schools and public institutions	Q3 2021	22.
Proposal for a sustainable food labelling framework to empower consumers to make sustainable food choices	2024	23.
Review of the EU promotion program for agricultural and food products with a view to enhancing its contribution to sustainable production and consumption	Q4 2020	24.
Review of the EU school scheme legal framework with a view to refocus the scheme on healthy and sustainable food	2023	25.
Reduce food loss and waste		
Proposal for EU-level targets for food waste reduction	2023	26.
Proposal for a revision of EU rules on date marking ("use by" and "best before" dates)	Q4 2022	27.

Source: (EC, 2020e).

In the fourth quarter of 2020, the European Commission adopted recommendations for each Member State on the nine specific objectives of the Common Agricultural Policy before the formal submission of draft strategic plans (EC..., 2020c). In the document, the only references related to cattle are linked with greenhouse gas emissions. The recommendations on the need to improve animal welfare do not directly mention the beef sector.

Economic implications – beef prices and producers' income

Certain calculations determining economic relations can be found not in the strategy itself, but in the analytical document (Barreiro et al., 2021). According to the authors (p. 41), it is believed that in the cattle sector the most important task is to improve the global nitrogen balance (GNB). This can be achieved by reducing the herd of animals significantly (reduced manure production). As a result,

the supply of meat is expected to decline by around 14% (by 2030). According to data from OECD-FAO, beef production in Europe is to decrease by 5%. It should be noted that beef consumption will remain practically unchanged. The expected increase in beef prices may result from the combined action of two factors: the reduction in the number of herds and the relatively constant, inelastic demand for food in European countries. Price increases may translate into disproportionately high incomes of producers in the meat sectors. The projected increase in the price of beef by 24% would result in an increase in the total income from beef production by 126%.

Conclusions

Actions specified in the strategy, leading to considering external costs of food production (especially health and environmental ones), would inevitably result in an increase in its prices, because, according to analyzes, the costs even exceed the market value of food. So far, they have been covered by taxpayers, consumers, and other entities. In this situation, in the opinion of the Commission, it seems justified to gradually abandon the cheap food policy, which is justified in poorer countries (IAFE-NRI, 2020a).

Recently (May-July 2021), three documents of the European Commission on the zero-emission plan for air, soil and water, or climate neutrality, were published (EC, 2021a; 2021b; 2021c). It will probably be one of the most difficult elements of the strategy to fulfill. In the case of Poland, the very diagnosis of the problems will require a considerable effort, because this issue was not a priority in agricultural policy. This task may be a major challenge for agriculture (not only in Poland) and involve significant economic costs for all types of farms. Zero-emissions are a huge challenge also for the processing industry. It means, *inter alia*, reducing excess of packaging, or the widespread development of using innovative and sustainable packaging made from environmentally-friendly materials that can be reused and recycled. Solutions in this area must depend on the assessment of their potential effects, so as not to lower the health safety standards of food or to waste it. As far as beef is concerned, it was only mentioned in the third document (EC, 2021c). It is mentioned that producers are to reduce the so-called “carbon footprint” by 2030.

Another element of the impact of both strategies by 2030 is the reduction of sales of antimicrobials intended for livestock by 50%. The nature of the action is related to the improvement of livestock welfare by influencing extensification of farming. Without undermining the validity of the arguments, it should also be pointed out that for breeders this change will result in the necessity to limit production and lower the competitiveness of agriculture and agri-food processing. The adoption of the restrictions requires simultaneous introduction of instruments to protect the internal market against foreign competition, or control of compliance with high EU standards by third countries exporting to our internal, EU and Polish markets. The introduction of restrictions will make the Polish and EU agri-food

sectors uncompetitive on global markets. Poland is one of the largest producers and exporters of beef in Europe, hence the introduction of the discussed restrictions may have a negative impact on the future of the industry.

Reducing the production of live cattle can result in several positive effects: reducing greenhouse gas emissions and at the same time improving the nitrogen balance, as well as improving producers' income thanks to the increase in live prices.

Recommendations for beef producers

- use new and innovative feed additives,
- try to limit the use of antibiotics,
- take care of animal welfare,
- try to reduce greenhouse gas emissions: methane and ammonia,
- take part in the proposed eco-schemes (extensive grazing, manure, and slurry management),
- use modern means of production in the barn and on the farm in general.

Documents related to the “Farm to Fork” Strategy

(Projekt Stanowiska..., 2020)

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal, COM (2019) 640.

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU Biodiversity Strategy 2030. Bringing nature back into our lives, COM/2020/380 final.

Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides.

Directive 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC (Journal of Laws of the EU L 344 of 17/12/2016, page 1) indicating the reduction levels, e.g., ammonia emissions for 2020-2029 and from 2030.

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A new Circular Economy Action Plan for a cleaner and more competitive Europe COM (2020) 98.

Directive (EU) 2019/633 of the European Parliament and of the Council of 17 April 2019 on unfair trading practices in business-to-business relationships in the agricultural and supply chain.

A package of regulations establishing rules for the implementation of the CAP from 2021-2027, i.e.,

- proposal for a Regulation of the European Parliament and of the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common Agricultural Policy (CAP strategic plans) and financed by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulation (EU) No. 1305/2013 of the European Parliament and of the Council and Regulation (EU) No. 1307/2013 of the European Parliament and of the Council;
- proposal for a Regulation of the European Parliament and of the Council on the financing, management and monitoring of the common agricultural policy and repealing Regulation (EU) No. 1306/2013;
- proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) No. 1308/2013 establishing a common organisation of the markets in agricultural products, (EU) No. 1151/2012 on quality schemes for agricultural products and foodstuffs, (EU) No. 251/2014 on the definition, description, presentation, labelling, and the protection of geographical indications of aromatised wine products, (EU) No. 228/2013 laying down specific measures for agriculture in the outermost regions of the Union and (EU) No. 229/2013 laying down specific measures for agriculture in favour of the smaller Aegean islands.

Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy COM (2011) 0021.

Communication from the European Commission Europe 2020: A strategy for smart, sustainable, and inclusive growth COM (2010) 2020.

Report from the Commission to the European Parliament and the Council regarding the use of additional forms of expression and presentation of the nutrition declaration, COM (2020) 207 final.

Commission document – Evaluation of the Regulation (EC) No. 1924/2006 on nutrition and health claims made on foods with regard to the nutrient profiles and health claims made on plants and their preparations and of the general regulatory framework for their use in foods, SWD (2020) 96 final.

Annex XI to the Regulation of the European Parliament and of the Council (2028) on the Strategic Plan contains a list of 12 EU regulations that should be provided for in the CAP Strategic Plans. The following may be useful in connection with the rearing of live cattle:

- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy;
- Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources;
- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe;
- Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants;
- Regulation (EU) 2018/841 of the European Parliament and of the Council 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;
- Regulation (EU) 2018/842 of the European Parliament and of the Council 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;
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources; Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency;
- Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action;
- Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides.

References

- Animal Welfare Labelling. Retrieved from: https://ec.europa.eu/food/animals/animal-welfare/other-aspects-animal-welfare/animal-welfare-labelling_en (access date: 14.06.2021).
- Babczyk-Zielińska, E., Jeżewska-Zychowicz, M. (2018). Wpływ czynników środowiskowych na wybór i spożycie żywności. *Handel Wewnętrzny*, 2(355), pp. 5-18.
- Barreiro Hurlé, J., Bogonos, M., Himics, M., Hristov, J., Perez Dominguez, I., Sahoo, A., Salputra, G., Weiss, F., Baldoni, E., Elleby, C. (2021). *Modelling environmental and climate ambition in the agricultural sector with the CAPRI model*. EUR 30317 EN, Publications Office of the European Union, Luxembourg. DOI:10.2760/98160, JRC121368.
- Beldowicz, A. (2021). *Hodowla zwierząt odpowiada za prawie 90% toksycznych emisji*. Retrieved from: <https://klimat.rp.pl/rolnictwo/art17077061-hodowla-zwierzat-odpowiada-za-prawie-90-toksycznych-emisji> (access date: 7.06.2021).
- European Commission (2017). DeSIRA: Development Smart Innovation through Research in Agriculture. Retrieved from: https://ec.europa.eu/international-partnerships/programmes/de-sira_en (access date: 10.06.2021).
- European Commission (2018a). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment, COM/2018/673 final.
- European Commission (2018b). Proposal for a Regulation of the European Parliament and of the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulation (EU) No 1305/2013 of the European Parliament and of the Council and Regulation (EU) No 1307/2013 of the European Parliament and of the Council, COM/2018/392 final - 2018/0216 (COD).
- European Commission (2020a). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. EU Biodiversity Strategy for 2030, COM/2020/380 final.
- European Commission (2020b). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM/2020/381 final.
- European Commission (2020c). Commission Staff Working Document Commission recommendation for Poland’s CAP Strategic Plan Accompanying the Document Communication from the Commission to the European Parliament, the Council, the European Economic And Social Committee and the Committee of the Regions Recommendations to the Member States as Regards Their Strategic Plan for the Common Agricultural Policy, SWD (2020) 389 final.
- European Commission (2020d). Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM/2020/80 final.
- European Commission (2020e). Annex to Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM(2020) 381 final.
- European Commission (2021a). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Pathway to a Healthy Planet for All EU Action Plan: ‘Towards Zero Pollution for Air, Water and Soil, COM(2021) 400 final.

- European Commission (2021b). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. 'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality, COM/2021/550 final.
- European Commission (2021c). Proposal for a Regulation of the European Parliament and of the Council Amending Regulations (EU) 2018/841 as Regards the Scope, Simplifying the Compliance Rules, Setting out the Targets of the Member States for 2030 and Committing to the Collective Achievement of Climate Neutrality by 2035 in the Land Use, Forestry and Agriculture Sector, and (EU) 2018/1999 as Regards Improvement in Monitoring, Reporting, Tracking of Progress and Review. COM/2021/554 final.
- European Environmental Bureau (2021). Beyond Net-Zero Emission in Agriculture. Creating an Enabling Climate Governance for Agriculture. Retrieved from: <https://eeb.org/library/beyond-net-zero-emission-in-agriculture/> (access date: 5.06.2021).
- European Green Deal. Retrieved from: <https://www.consilium.europa.eu/pl/policies/green-deal/> (access date: 6.06.2021).
- Eurostat (2019). Agriculture, Forestry and Fishery Statistics. Luxembourg: Publications Office of the European Union.
- Felli, R. (2014). On Climate Rent. *Historical Materialism*, Vol. 22, No. 3-4, pp. 251-280.
- Hennessy, D., De Vlieghe, A., Die Dean, M., Klumpp, K., Poilane, A., Richmond, R., Schönhart, M., Svoboda, P., Rijn van, C. EIP-AGRI Focus Group. Grazing for Carbon. Mini-Paper – Guidelines. Retrieved from: fg25_03_minipaper_guidelines.pdf (europa.eu). (access date: 7.06.2021).
- IAFE-NRI (2019). Nowa metoda pomiaru bilansu emisji gazów cieplarnianych (GHG) w gospodarstwach rolniczych – renta klimatyczna – jej wycena oraz wykorzystanie. Ekspertyza.
- IAFE-NRI (2020a). Opinia w zakresie oceny skutków ekonomiczno-społecznych dla gospodarstw rolnych i branży rolno-spożywczej w związku z realizacją założeń Strategii „Od pola do stołu” na rzecz sprawiedliwego, zdrowego i przyjaznego dla środowiska systemu żywnościowego.
- IAFE-NRI (2020b). *Rynek mięsa. Stan i perspektywy*. Nr 59. Analizy rynkowe. Warszawa: IERiGŻ-PIB.
- IFOAM EU (2020). Using Eco-Schemes in the New CAP. A Guide for Managing Authorities. Brussels: IFOAM EU.
- Konieczny, J. (2018). *Bezpieczeństwo zdrowia publicznego w zagrożeniach epidemiologicznych. Teoria-Praktyka-Metodologia-Etyka. Poznanie naukowe. Studia i materiały*. Retrieved from: https://wnpid.amu.edu.pl/_data/assets/pdf_file/0025/117196/Jerzy-Konieczny.pdf.
- Kułyk, P., Gąsiorek-Kowalewicz, A. (2018) Rozwój zielonej gospodarki w krajach Grupy Wyszehradzkiej. *Zeszyty Naukowe SGGW w Warszawie. Problemy Rolnictwa Światowego*, 18(XXXIII), 2, pp. 193-206.
- Midor, K. (2012). Ekonomia zrównoważonego rozwoju alternatywą dla współczesnej gospodarki światowej. *Systemy Wspomagania w Inżynierii Produkcji*, 2(2), pp. 56-68.
- Molenda, A. (2020). Ekoschematy – nowe propozycje w płatnościach bezpośrednich. *Agronews*, 15.06.2020. Retrieved from: <https://agronews.com.pl/artukul/ekoschematy-nowe-propozycje-w-platnoscjach-bezposrednich/>
- Ministry of Agriculture and Rural Development (2018). Strategia rozwoju sektora wołowiny – Polska wołowina 2022. Retrieved from: <https://www.gov.pl/web/rolnictwo/strategia-rozwoju-sektora-wolowiny-polska-wolowina-2022> (access date: 12.06.2021).

- Ministry of Agriculture and Rural Development (2019). Diagnoza sektora rolno-spożywczego i obszarów wiejskich w Polsce przygotowana dla potrzeb opracowania Krajowego Planu Strategicznego 2021-2027. Załącznik do Planu Strategicznego.
- Ministry of Agriculture and Rural Development (2020). Plan Strategiczny dla Wspólnej Polityki Rolnej. Warszawa: MRiRW.
- Ministry of Agriculture and Rural Development (2021). Plan Strategiczny dla Wspólnej Polityki Rolnej na lata 2023-2027. Lipiec 2021.
- Ministry of Climate and Environment (2021). Krajowy bilans emisji SO₂, NO_x, CO, NH₃, NMLZO, pyłów, metali ciężkich i TZO za lata 1990-2019. Raport syntetyczny. Retrieved from: https://www.kobize.pl/uploads/materialy/materialy_do_pobrania/krajowa_inwentaryzacja_emisji/Bilans_emisji_za_2019.pdf.
- NCBA (2021). Beef Industry Optimism Fueled by Strong Demand. Retrieved from: <https://www.drovers.com/news/industry/beef-industry-optimism-fueled-strong-demand> (access date: 4.06.2021).
- OECD-FAO. Agricultural Outlook 2021-2030. Retrieved from: <http://www.fao.org/publications/oecd-fao-agricultural-outlook/2021-2030/en/>
- Official Journal of the European Union (2016). L 344 of 17 December 2016.
- Oleksy, K. (2020). *Eurobarometr 91.3 – Bezpieczeństwo żywności w UE jak wypada Polska*. Retrieved from: <https://foodfakty.pl/eurobarometr-91-3-bezpieczenstwo-zywnosci-w-ue-jak-wypada-polska> (access date: 16.06.2021).
- PAP (2019). *Polska eksportuje ponad 80 proc. wyprodukowanej wołowiny*. Retrieved from: <https://www.farmer.pl/produkcja-zwierze/bydlo-i-mleko/polska-eksportuje-ponad-80-proc-wyprodukowanej-wolowiny,83695.html> (access date: 16.06.2021).
- Projekt Stanowiska Rządu, Komunikat Komisji do Parlamentu Europejskiego, Rady, Europejskiego Komitetu Ekonomiczno-Społecznego i Komitetu Regionów: Strategia „Od pola do stołu” na rzecz sprawiedliwego, zdrowego i przyjaznego dla środowiska systemu żywnościowego. Warszawa, czerwiec 2020.
- Sobczyk, G. (2018). Zachowania konsumentów wobec nowych trendów konsumpcji. *Annales Universitatis Mariae Curie-Skłodowska. Sectio H. Oeconomia*, 52(1), pp. 171-180. Retrieved from: <http://oeconomia.annales.umcs>.
- Statistics Poland (2020). *Rocznik statystyczny rolnictwa*. Warszawa: GUS.
- Veterinary Medicines Directorate (2016). Understanding the mg/PCU calculation used for antibiotic monitoring in food producing animals. Retrieved from: <https://www.gov.uk/government/publications/understanding-the-mgpcu-calculation-used-for-antibiotic-monitoring-in-food-producing-animals> (access date: 17.06.2021).

Internet sources:

- www.encyclopediapratis.eu
www.heumilch.at
www.pastureforlife.org
www.weidebeef.de

STRATEGIA „OD POŁA DO STOŁU” I JEJ IMPLIKACJE DLA ROZWOJU SEKTORA PRODUKCJI WOŁOWINY W POLSCE

Abstrakt

Artykuł dotyczy dokumentu Unii Europejskiej strategia „Od pola do stołu”, znaczącego dla przyszłości wspólnej polityki rolnej i skutków jego wprowadzenia dla sektora wołowiny w Polsce, ważnego elementu eksportu rolno-żywnościowego. W analizie wykorzystano badanie typu „desk research” dla rozpatrzenia aktów prawnych Unii Europejskiej i dokumentów strategicznych (w tym Planu Strategicznego dla WPR), a także Eurostatu, organizacji międzynarodowych (FAO, OECD) i organizacji branżowych. Analizę wykonano metodą ekspercką. Ograniczała się ona do czterech grup zagadnień: emisji gazów cieplarnianych, ekoschematów, antybiotyków i dobrostanu zwierząt. W konkluzji stwierdzono, że działania zakładane w strategii prowadzące do uwzględnienia kosztów zewnętrznych wytwarzania żywności (zwłaszcza zdrowotne i ekologiczne) nieuchronnie prowadziłyby do podwyższenia jej cen, ponieważ według analiz koszty te przewyższają nawet wartość rynkową żywności. Dotychczas są one pokrywane przez podatników, konsumentów, inne podmioty. W tej sytuacji wydaje się zdaniem Komisji zasadne, aby stopniowo odchodzić od polityki taniej żywności, która ma uzasadnienie w krajach biedniejszych.

Słowa kluczowe: strategię rozwoju rolnictwa UE, wspólna polityka rolna, produkcja wołowiny, dobrostan zwierząt.

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