

Views and Comments

AGRICULTURE VS. CLIMATE

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Introduction

The following considerations regarding the rapidly changing relations between farming and climate change and protection are only an attempt to indicate the importance of complex processes, which not only change the conditions of agricultural production, but also necessitate in-depth transformations of agricultural policy and are a major challenge for science and institutions involved in the dissemination of knowledge.

The author of this paper, which is the fruit of an address at a scientific conference held on the occasion of the jubilee of the Institute of Agricultural and Food Economics in Warsaw, has limited himself only to several problems, conditions, and proposals of national and EU institutions regarding the aforementioned relations.

A thesis based on this address may be the statement that climate change, the response of agricultural policy to this change, and adaptations in the real sphere (of production, distribution, and consumption) are the basis for a new green revolution.

Several discoveries of modern society with respect to relation between agriculture and climate: (largely owing to scientific achievements)

Farmers' activities and the results of their work, as well as the production structure and technologies used, are largely dependent on climate. This remark applies to both traditional and modern agriculture. Advances in science and the wide-ranging use of research results by farmers do not make agriculture independent of climatic conditions and climate change. They only allow to increase resilience to

certain climatic phenomena. However, even in the most modern agriculture, there are fat years and lean years, on which environmental conditions, including climatic conditions, have a great impact.

When examining the relation between agriculture and climate, a critical point was to notice and appreciate the bidirectional impact: of climate on agriculture and of agriculture on climate.

The dependence of agriculture on climate has been usually obvious to every farmer. However, in this case, the traditional unidirectional approach was dominant; treating natural disasters, drought, flooding, unexpected frost, invasion of insects, etc. as an act of God, in the face of which the farmer was helpless. Climate was treated as part of nature, and like all adverse weather phenomena, often very dangerous for agricultural activities. In traditional agriculture, people did not talk about climate; they only talked about the weather.

The bidirectional relation between agriculture and climate, a relation which has been noticed and described relatively recently, results mainly from studies conducted in many fields of science. The results of these studies had a major impact on changing the attitude of humans (also farmers) towards nature. The fight against nature, as propagated by Marxism and several other philosophical and economic currents, is replaced by the idea of interaction with nature. More than thirty years ago, Ryszard Manteuffel wrote about it as follows: "Nature is not malicious. It does not fight against humans. It is rather humans who fight against nature by destroying it mindlessly and, so to say, cutting the branch on which they sit. Nature is kind (...) However, we must not fight against nature. We must not compel it into giving in a manner which is strange to it (...) We must observe the living nature and discover the ways of interaction which are suitable for it, the ways it accepts" (Manteuffel, 1987, p. 9-10).

Research shows that 25% of greenhouse gas emissions in highly developed countries are generated by agriculture, but agriculture also absorbs greenhouse gases and many other pollutants.

The importance of science. Research can quite accurately describe the bidirectional relations between agricultural activities and climate. It can also tell us how to adapt agricultural production to climate change. The implementation of the Green Deal concept is a great challenge for science, education, and counseling.

Modern societies have discovered and, to a large extent, accepted several **fundamental rules** in the relation between agriculture and climate, which are as follows:

1. Climate change is largely anthropogenic – it depends on human activity;
2. Agriculture has a major impact on climate change and also bears the consequences of this change;
3. The relations between agricultural activities and climate change are bidirectional. Agriculture can significantly contribute to climate protection;
4. In general, market mechanisms are not conducive to reducing the negative impact of agriculture on climate, but market instruments are useful in protecting the environment, as evidenced by the achievements of environmental economics;

5. Climate protection is becoming a social value, although to a varying degree, depending on the country, social group, and age of citizens;
6. The incorporation of climate protection in the axionormative foundations of a state and its citizens is a prerequisite for the launch and social legitimation of a public policy geared towards climate and environmental protection;
7. Instruments, in particular financial but also legal ones, of public policy supporting agriculture, such as the CAP, can turn out to be an effective tool for climate protection measures;
8. Climate policy, such as the Green Deal in the EU (and not climate change), should not be treated as a threat to the development of the economy, agriculture, or citizens' welfare;
9. Climate protection requires a significant increase in expenses for research, education, innovation, counseling, and other forms of disseminating knowledge in the field of climate and environmental protection. These expenses can contribute to a new "green revolution" in agriculture, a positive change in consumption patterns, citizens' health, and more complete sustainability of development.

The Common Agricultural Policy after 2020 and climate protection

On 11 December 2019, the European Commission adopted a document entitled *The European Green Deal*, which forms the basis for one of the EU's most important strategic programs. The parts of this program are: *Farm-to-Fork strategy*, *Biodiversity strategy*, *Climate Law*, and *Circular Economy*. They are all important for agriculture and rural areas, and therefore must be included in the new concept of the Common Agricultural Policy, including its 9 main goals (EC-SWD (2020)). The strategy of building the Green Deal in the EU is an example of global solidarity of this grouping, and a role model for other countries. It is a project of a civilizational nature, impacting all the most important spheres of life and public policies.

The new EU strategy deepens and broadens the development goals, which have already been initiated many years ago, and stem from the values adopted by the Community. The CAP, as one of the EU's most important policies, is increasingly becoming a value-based policy (climate protection, biodiversity, sustainability, quality of food, animal welfare, etc.). New terms have appeared in the EU's strategic concepts to symbolize the important development goals: competitive sustainability, green transition, ecological transition, and social justice.

The coronavirus pandemic has enhanced the popularity of the term resilience. This term has quite extensive meaning. In its simplest terms, it can symbolize the ability to effectively adapt to external shocks and to survive. However, it is also includes adaptation skills which enable the development and creative overcoming of threats and barriers. In this broader sense, it has been integrated into the latest EU programs.

The agricultural policy, especially in highly developed countries, can make a significant contribution to measures conducive to climate protection. On a global scale, about 25% of greenhouse gases result from agricultural activities, in particu-

lar, breeding activities (in Poland, this share is smaller, estimated at about 10%). Therefore, agriculture has a major impact on climate change. At the same time, around USD 300 billion from public funds is annually allocated to support agriculture in these countries. Such enormous public funds addressed to agriculture are a strong basis for demanding that this area of activity take greater account of important social interests, including those regarding the environment and climate protection. This is mentioned by the authors of a report drawn up upon the request of the World Bank: *Revising Public Support to Mitigate Climate Change* (Searching et al., 2020). This is in line with the demand formulated for many years and stating that support for agriculture should be, to a large extent, remuneration for farmers for providing society with public goods or so-called *merit goods*.

Polish priorities in relation to the Common Agricultural Policy post-2020 and the Green Deal strategy

Since 2015, the Polish Government has been clearly reluctant not only towards radical reforms aimed at strengthening European integration, but, generally, towards the most important axiological foundations of the European Union. Our country's representatives are not much involved in shaping the EU's development strategy or creating the most important documents for implementing this strategy, including building the Green Deal.

The most important strategic documents formulated by the Polish Government and the priorities presented therein pay little attention to climate protection issues, and the proposals in this regard are clearly conservative. An example can be the following demand: "The contribution of agriculture to climate protection and building resilience to climate change should focus on protecting existing and building new organic carbon resources in the soil and biomass of agricultural origin, and on the development of renewable energy sources. This approach, implemented through measures in both pillars of the CAP, will ensure synergy between mitigation and adaptation goals. It is also the least burdensome for the competitiveness of EU agriculture and takes into account the specificities of its production structures and systems" (MRiRW, 2017, p. 12).

One of the major conclusions of this document is as follows: "to take environmental and climate aspects into account, using, first of all, the effects of synergies with the European agricultural development model based on family farms, while minimizing the negative effects on their international competitiveness".

The 2019 Polish strategic document on agriculture and rural areas, in the part regarding climate change (opportunities and threats) states: "What is increasingly noticed, is climate change which in many regions of the world results in restrictions on the availability of food, drinking water, and energy resources, and in threats to biological balance. It is increasingly becoming a factor of problems in the agricultural and fisheries production and in agri-food processing, thus affecting the balance in many agricultural markets and increasing the risk associated with economic activity in the agri-food sector. In Polish conditions, the importance of water resource

management (retention, drainage, irrigation) is growing. At the same time, Poland sees emerging opportunities for the development of “new” crops (e.g., soybean or vine)” (*Strategia zrównoważonego...*, 2019, p. 12). The main point of reference for the above-mentioned strategy is the “Strategy for Responsible Development” (SRD) adopted by the Council of Ministers on 14 February 2017, a document that had stopped being of real importance as a basis for our country’s development, which became visible in the light of subsequent development phenomena and trends. The SRD was characterized by, *inter alia*, ignoring or minimizing the importance of European integration for the development of Poland. The above-mentioned document regarding agriculture and rural areas (SZRWRiR 2030) also makes little reference to the European Union’s development strategy, proposals to change the CAP, and the importance of the Green Deal concept. It turns out that “we do not play in the EU team” when preparing the most important strategic documents for our country, in cooperation with EU institutions and in harmonious cooperation with other countries. Meanwhile, green transition, sustainable competitiveness, strengthening of resilience, and other EU initiatives require even closer cooperation within the Community than before.

The importance of research, counseling, and knowledge transfer

In a review article regarding the impact of climate change on agriculture, Blanc and Reilly (2017) point out that so far, researchers have been focused on analyzing the impact of weather events on agriculture rather than the impact of climate change. The latter phenomenon is more complex and requires much more extensive studies. They wrote: “Unfortunately, even if climate change could be predicted with certainty, we are still far from conclusively determining its effects on agriculture, either globally or for specific farming regions. Estimating accurately the weather or climate effect on crop yield is only the very first step in understanding what it means for farmers in a region, the food supply, and global markets. Thus, further research concerning climate change impacts on the agricultural sector is essential” (Blanc and Reilly, 2017, p. 255).

Climate change and the EU climate policy are usually presented by representatives of our national authorities as a threat to Polish agriculture, and the adoption of the Green Deal’s strategic goals is made conditional on increased funds under the Common Agricultural Policy. They are not duly considered as a development opportunity.

Ambitious development goals and new Community instruments require the comprehensive use of scientific achievements. The EU intends to allocate more funds for this purpose than ever before in its history, and to regain its position as a world leader in the field of research and development. This is a great opportunity for Polish science, but with the current systemic and institutional conditions and a very low level of financing for research and development from national sources, it can be extremely difficult to make use of this opportunity. This remark also applies to research and implementations (R&I) related to agriculture and rural development.

In this field, we can even observe regression when compared to previous years. There has been a reduction in financing for many research institutes of the Ministry of Agriculture and Rural Development, as well as organizational changes that are not always conducive to intensifying research in these units.

For many years, the agricultural advisory system in Poland, an extremely important link in the transfer of knowledge to agriculture, has been strikingly underfinanced and organizationally unstable. The EU funds which could be used to strengthen this link were mainly allocated for transfer to farmers, in line with the slogan that the most important thing is the “size of the wallet”, which will win the support of potential voters in the countryside.

The implementation of the Green Deal and of the just green transition, as well as many other EU projects, are “knowledge-intensive” areas, requiring many studies covering various fields of science: natural, technical, social, and others. Taking this fact into account can help transform the above-mentioned strategic projects into development opportunities.

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