



Food crisis: Innovative building of resilient regional and local communities

Session 1: Impact of climate change on food systems

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By way of introduction...

„Climate change, hunger and poverty, loss of biodiversity, forest destruction, water crises, food safety – what all these threats have in common is that a principal cause for each of them is in the way we produce, trade, consume and discard food and other agricultural products. However, agriculture is not high on the agenda of media, politicians, financial institutions or many environmental organisations. Yet, none of the major global challenges ahead of us will be met without profound and lasting changes of today’s dominant agricultural practices and food policies.”

Greenpeace, 2009: Agriculture at a Crossroads: Food for Survival

Agriculture and environment: selected relationships

- **Climate change** will increasingly **put pressure on food production and access**, especially in vulnerable regions, undermining food security and nutrition (high confidence) (IPCC 2022).
- Increases in frequency, intensity and severity of droughts, floods and heatwaves, and continued sea level rise **will increase risks to food security** (high confidence).
- Weather and climate extremes are causing **economic and societal impacts across national boundaries through supply-chains, markets, and natural resource flows, with increasing transboundary risks projected across the water, energy and food sectors** (high confidence).
- While agricultural development **contributes to food security, unsustainable agricultural expansion**, driven in part by unbalanced diets, **increases ecosystem and human vulnerability and leads to competition for land and/or water resources** (high confidence).
- An estimated **23% of total anthropogenic greenhouse gas (GHG)** emissions derive from Agriculture, Forestry and Other Land Use (AFOLU) (IPCC 2020).
- According to Richards et al. (2015), **agriculture contributes an average of 30% of countries' total GHG emissions**. In **42 countries**, agriculture contributes **more than half** of GHG emissions. In **91 countries** agriculture contributes **≥20% of GHG emissions**.
- The total share of GHG emissions from agriculture in **PL** is **8,4%** (KOBiZE 2021). In the **EU**, an average of **10,3%** of GHG come from agricultural sources (European Court of Auditors 2021).
- **Agricultural GHG emissions can only be reduced to a certain level** and a simultaneous **focus on other parts of the food system is necessary to increase food security whilst reducing emissions** (Bennetzen et al. 2016).

Climate neutrality in the agri-food sector - is it possible?

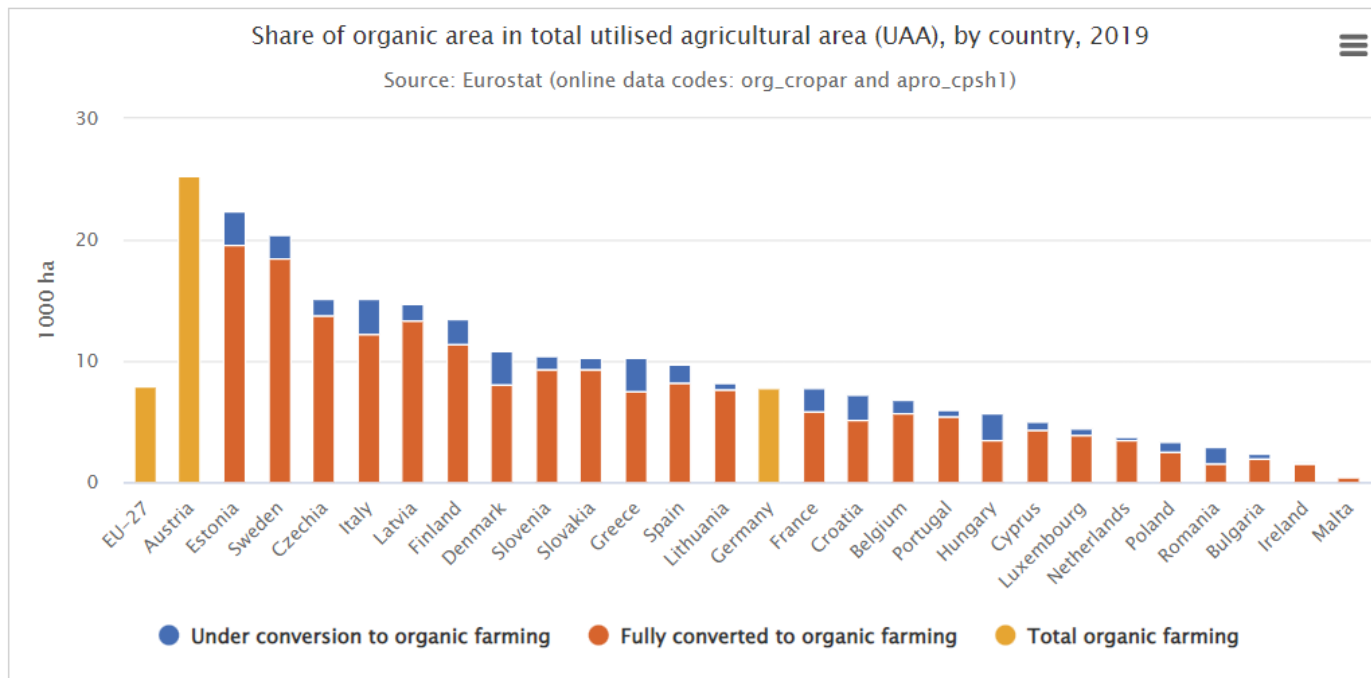
Only by **coordinating actions across both the production and consumption** (supply and demand) sides **can we transform the way agricultural products are conceived in response to the climate challenge and how the sector can therefore support climate action.**

This can rely on three fundamental approaches:

- **Avoiding emissions where possible** – changing the types of commodities produced, reducing the consumption of livestock and other carbon intensive products, and eliminating food waste;
- **Reducing emissions where they can-not be avoided** – increasing the resource-efficiency of production, lowering the per-unit GHG emissions of a commodity, producing seasonally and in the most optimal conditions in Europe, and reducing harvesting wastes;
- **Recovery of emissions where possible** – increasing the sequestration potential on land to build carbon sequestration into standard production practices and ensuring its continued and permanent management on agricultural land; developing circular-bioeconomies that recover post consumption and production nutrients, energy and materials as inputs to the sector, reducing the need for new inputs.

Lóránt A. & Allen B., 2019. Net-zero agriculture in 2050: how to get there? Report by the Institute for European Environmental Policy

Organic farming in Poland

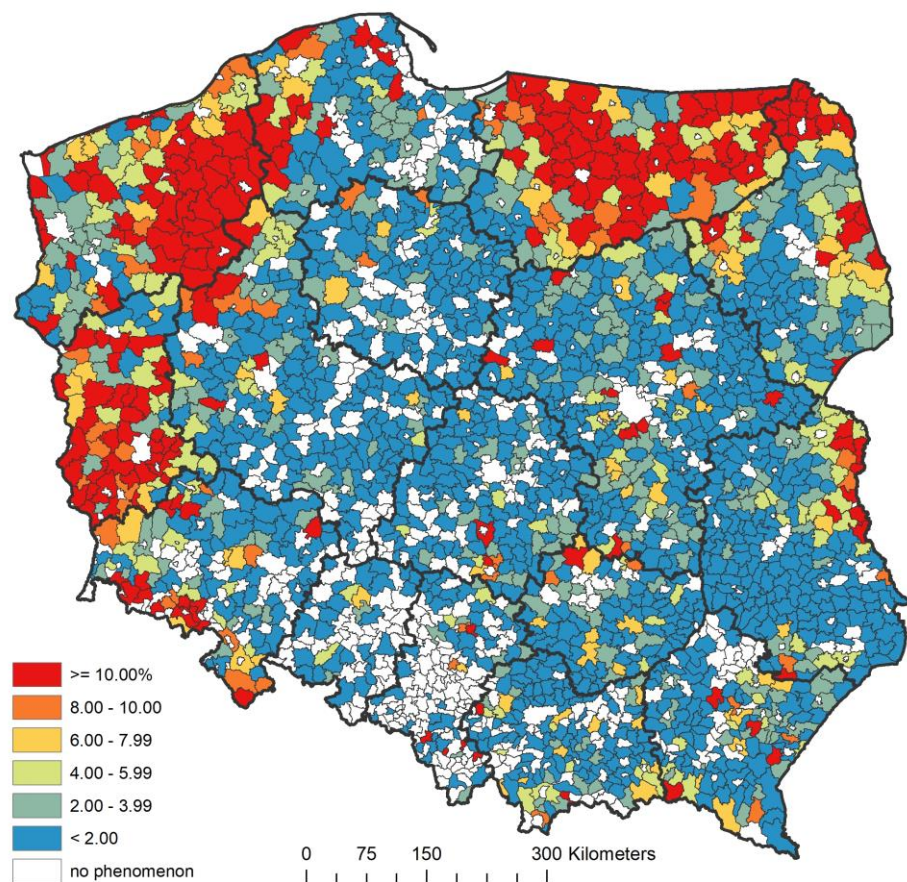


The share of the **EU's agricultural land under organic farming** is increasing, rising from 5.8% in 2012 to **9.1%** in 2020. The share of organic farming in **Poland** is **3.7%** of the total utilised agricultural area (a decrease from 4.4% in 2012).

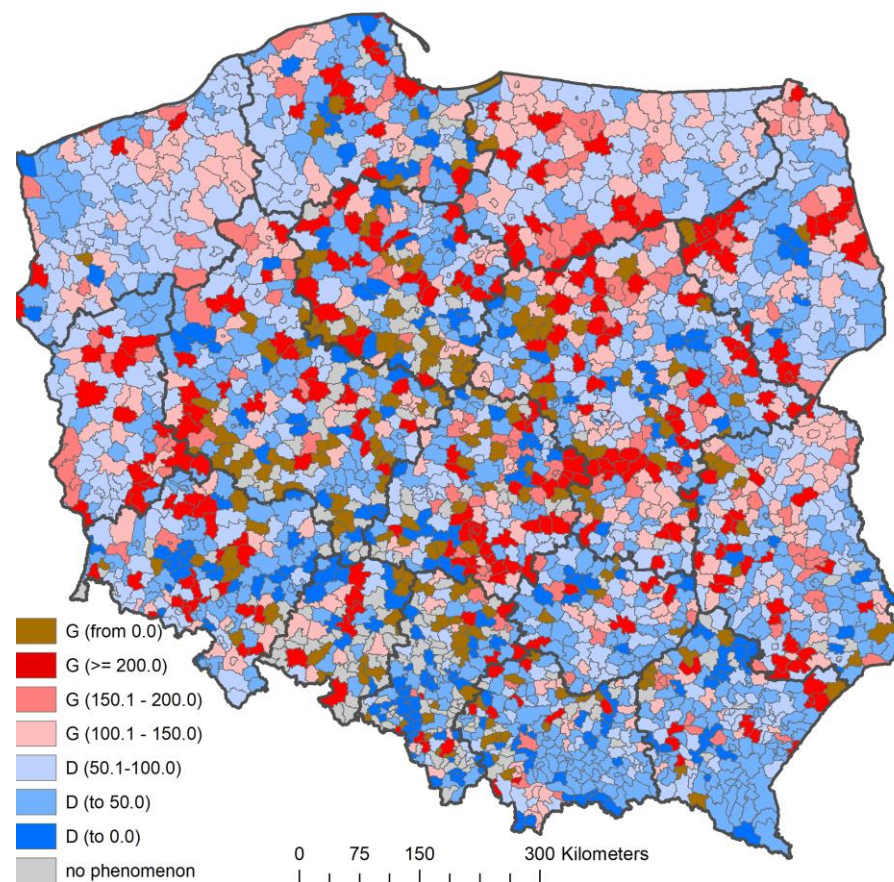
The **European Green Deal** sets the target that, by 2030, **25% of the EU's agricultural area** should be **under organic farming**.

Poland's strategic plan for the Common Agricultural Policy (CAP) for 2023-2027 assumes the share of organic farming at the level of **7%**.

Organic farming in Poland



% share of total utilised agricultural area under organic farming in Poland in 2021



Changes in the share of organic farming in Poland in 2012-2021

Conclusions and recommendations for discussion

- 1. Current challenges require a transformation of agriculture that can combine both economic (farmer's profit), social (food security) and environmental (reducing the pressure on the environment) objectives.**
- 2. The transformation of agriculture requires simultaneous adaptation and mitigation measures.**
- 3. Appropriate financial, substantive and organizational support for farmers (including/in particular individual farms, including technical and financial assistance for organic producers) is necessary.**
- 4. Precision farming/smart farming techniques should be implemented.**
- 5. It is crucial to building stronger food systems to strengthen resilience and better prepare for the future (possible further crises and food supply chain disruption).**
- 6. Food security needs regional and local agriculture (based on regional and local resources with an emphasis on greater energy and water efficiency), resilient to extreme weather events and climate change, the development of pests and diseases, with short food supply chains from farmer to consumer (limiting costs, high-quality and fast-delivery product). Organic farming and biologization of agriculture is one of the solutions (implementing the European Green Deal).**

Thank you for your attention

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„Farming looks mighty easy when your plow is a pencil and you are thousand miles from the corn field”.

— Dwight D. Eisenhower