UNISECO

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Mitigation of climate change by humus formation and regenerative arable farming in Eastern Austria

Photo: R. Weisshaidinger

Understanding and Improving the Sustainability of Agro-ecological Farming Systems in the EU

POLICY BRIEF

The case study background is climate change and low or declining organic matter content on arable land in Eastern Austria. The programme of the "Ökoregion Kaindorf" includes knowledge transfer to farmers, CO2 compensation certificates, reduced soil tillage, greening of arable land, the use of compost and an initiative for biochar.

RESEARCH FINDINGS

The primary agroecological practices are partly in place in the "Ökoregion Kaindorf"-programme participating farms. By implementing these soil regenerating measures, an average of 6 tons of CO2 per hectare and year is sequestrated on 4500 hectares, which serves climate change mitigation and adaptation and sustain other ecosystem services.

The UNISECO case study analysed the sustainability and barriers of agroecological transformation. Agroecological farmers achieved the highest ecological and social sustainability performance when having a high diversity of products and alternative marketing channels. Findings derived from farm economic modelling show that non-agroecological farms perform best on nearly all economic indicators; on the other hand, farm sustainability models show that they perform worse than agroecological farms in terms of economic resilience.

Farmers often refuse the idea of soil regeneration because of economic doubts but also by peer pressure. Barriers to successful carbon sequestration are insufficient knowledge of the soil and humus system among farmers and advisors and technical issues of on-farm composting of urban organic wastes. Other agroecological transformation challenges are poorly targeted incentives by CAP pillar 1, no clear soil-specific strategy in CAP pillar 2 (ÖPUL) and lack of market access for agroecological products.

Author(s):
Rainer Weisshaidinger, Margit Krobath, Andreas Mayer

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Austria

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If you have any questions concerning this Policy brief, please contact the author(s) by e-mail.

Contact email:
rainer.weisshaidinger@gmx.net

Year-round green cover

Year-round green cover of arable soils is an essential soil regenerating and agroecological practice.

Photo: Rainer Weisshaidinger

POLICY BRIEF

POLICY RECOMMENDATIONS

The UNISECO findings implications on a regional and national level are: 1) Improvement of soil-specific and agroecological training in agricultural colleges and further learning programmes; 2) Developing systemic agroecological advice, including exchanges from peer-to-peer about failed and best practice; and 3) Strengthen site-specific practice research, including farmers in research designs.

It seems necessary to re-design CAP pillar 1 to enable agroecology and soil regeneration on a European level. CAP pillar 2 (ÖPUL), which was seen as positive by the local multi-actor platform (MAP) members, could also implement more clear strategies to promote soil regeneration and carbon sequestration. Market mechanisms such as CO2 certificates are viewed very controversially by the MAP experts. Serious quantification of soil organic carbon, the durability of soil carbon sequestration and storage, and no outsourcing of costs are needed.

Future policies should consequently internalise external costs in the agricultural sector to create more cost transparency and equality. More policy and market measures are needed to develop market channels for agroecological products, especially in public procurement.

FURTHER INFORMATION

Case study description and story map: https://uniseco-project.eu/case-study/austria

Homepage Ökoregion Kaindorf (in German only):
https://www.oekoregion-kaindorf.at/humusaufbau.95.html

ABOUT UNISECO:
UNISECO is a European research project aiming to develop innovative approaches to enhance the understanding of socio-economic and policy drivers and barriers for further development and implementation of agro-ecological practices in EU farming systems.

Project coordinator: Dr Gerald Schwarz // Email: gerald.schwarz@thuenen.de // Phone: +49 531 596 5140 // Thünen Institute, Bundesallee 63 38116 Braunschweig, GERMANY

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