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Leibniz Centre for Agricultural Landscape Research (ZALF)

Position paper of the Leibniz Centre for Agricultural Landscape Research on the Action plan for the development of EU organic production

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The EU organic production lags behind the increasing demand by consumers and the political targets for the growth in organic production. New studies prove that organic farming can make a relevant contribution to solving the contemporary environmental and resource challenges. The advantages for the fields of water protection, soil fertility, biodiversity, climate protection and adaptation as well as resource efficiency are in particular a result of the system approach pursued in organic farming that in turn leads to a reduced production intensity (e.g. the limitation of fertilization level causes a low nitrate discharge risk; avoiding pesticides and minimizing the use of medications reduces the risks of seepage into groundwater).

In different regions and sectors, there is a high interest of conventional farmers to convert to organic farming. At the same time, many organic farmers work on further enhancing the agricultural, environmental and nature conservation performance as well as the societal benefits of their farming systems. The EU needs to address the hindering factors and support further research as well as private initiatives of farmers, organization and market actors in the organic movement to fully utilize the sustainability potential of organic farming.

To develop the action plan for the development of EU organic production, the **Leibniz Centre for Agricultural Landscape Research (ZALF)** suggests to focus specifically on the following areas:

Agricultural improvements within organic farming

Organic farming systems can further improve their agricultural performance and thereby attractiveness for farmers through innovations. The EU should support research, innovation, knowledge transfer but also on-farm learning, demonstration and experimentation approaches in the following fields:

1. **Legume cultivation, nutrient management and recycling:** Support cropping systems that integrate a larger area and higher productivity of grain and forage legumes through improved agronomy, breeding, disease resistance, and strengthen farming systems in which a large share of nutrients (especially N) comes from within the farm or a farm cooperation.

Argumentation: the area under legumes is often still below the required 20% on organic farms. Legume cultivation ensures the protein availability for food and feed use as well as for the farm nitrogen cycles. A high level of crop-livestock integration at farm or supra-farm level further provides for an efficient use and cycling of nutrients required for efficient production and emission reduction.

2. **Adaptation to climate change:** Support the development of more resilient organic farming systems through e.g. cropping system diversification, the use of novel (minor) crops or crop varieties as e.g. alfalfa with its very high drought tolerance or agroforestry.

Argumentation: Organic farming is often more diverse and develops higher soil qualities providing potential for adapting to climate change. The production standard of the EU-Eco-regulation, however, does not provide for sufficient resilience to the current and future climatic disturbances and insecurities.

3. **Plant protection:** Increase the availability of inputs for use in organic production, especially for plant protection, and enhance the transfer of pest control information to farmers.

Argumentation: High costs, a small market, and multiple approval requirements (registration of substance, listing of substance in organic regulation, certification of plant protection product) hinder the availability of inputs for organic farming. In recent years, tested and promising substances have become unavailable because extending registrations was not cost-effective (*Bazillus thuringiensis ssp. tenebrionis*), or their different derivatives did not get listed in the organic regulation (copper octanoate as a promising copper reduction alternative). At the same time, alternative pest control approaches such as use of plant strengtheners, biological control, nets and traps need to be better represented and proven information on these different approaches needs to be generated and transferred in a bundled, trustable and official manner.

4. **Site-specific adaptation:** Support site-specific and optimization of organic farming systems considering soils types, climate, culture and access to markets (rather than "one fits all").

Argumentation: The yield level in organic farming is much more site specific (soil type, precipitation) than in conventional farming, because legumes are the main source of nitrogen due to their yield specific N₂ fixation capacity. Therefore the site-specific optimization of the nitrogen supply through cultivation of legumes and the reduction of nitrogen losses is essential for the further expansion of organic farming. This is to be achieved through improved marketing, breeding and cultivation of grain legumes but also of fodder legumes and their further processing into high-performance fodder for dairy cattle and monogastric animals.

5. **Support technical/digital/IT** innovations that are based on (system-) knowledge, consider resource consumption and avoid substances that might harm people and the environment.

Argumentation: Technical/digital/IT innovations are necessary in organic farming to improve the nutrient supply and the resource consumption at farm and field level. The development of robotics and autonomous systems for weed, pest and disease control have great potential to reduce the application of harmful substances for people and the environment in organic farming systems.

6. **Biodiversity:** The EU should support measures enhancing biodiversity and nature conservation at the field, farm and landscape level, also and specifically for organic farms. Specific measures should address all production areas like arable fields, grassland, orchards, vineyards, horticulture, the preservation and maintenance of existing landscape elements, the new establishment of temporary and /or permanent landscape elements as well as the optimization of the arrangement and connectivity of these elements.

Argumentation: Farmers, enterprises and NGOs take initiatives for further enhancing the contribution of organic farming to biodiversity conservation. Organic farming in general supports a higher farm biodiversity which provides high potential for specific support measures. Existing agri-environmental programs are often not available for organic farms or only at reduced funding.

Further enhancement of societal benefits

The organic sector is very active in further developing its pioneer role in enhancing societal benefits of farming and food production. Waste reduction, mitigation of climate impacts, social engagement for fair working and trade conditions, development of new sustainability standards are some of the examples. The EU should support private initiatives e.g. through networking, supporting innovation and communication and marketing of outstanding initiatives and the linked products.

7. **Advisory services:** Establish offers on a regional level in particular for biodiversity issues at no costs to the farmers.

Argumentation: Advisory services and legally reliable information on funding opportunities have proven to be a decisive factor for the willingness of farmers to participate in e.g. agri-environmental programs. It can also be an economically rational strategy to invest in expert advisory services rather than simply distributing subsidies non-selectively.

8. **Education:** Support education on the interactions between food production and the consequences for people and the environment as well as the benefits that organic farming can contribute (drinking water quality, no use of pesticides, biodiversity, food quality).

Argumentation: Most consumers are unaware of these interactions. If consumers are aware of these links, they will look for organic products on their own initiative. Education ought to consider all levels (from primary schools to universities), and support agricultural knowledge systems as well.

9. **Policy:** Help farmers to improve their environmental and climate performance through targeted measures at whole farm level. Improve the efficiency and effectiveness of direct payments to private farmers and small enterprises that create substantial employment per unit agricultural area. Increase incentives for biodiversity friendly measures.

Argumentation: Considering the system approach organic farming can simultaneously reduce various environmental problems and consequently the aggregate impact should also play an important role when evaluating organic farming. These benefits should be better rewarded from a long-term perspective to encourage farmers to convert and continue with organic farming.

About ZALF

The Leibniz Centre for Agricultural Landscape Research (ZALF) is a national research institution of the Leibniz Association. Its mission is to scientifically explain causal relationships in agricultural landscapes, and to provide society with a knowledge-base for the sustainable use of agricultural landscapes through excellent research. ZALF is unique for the integrated research on agricultural landscapes for the sustainable management of soil, land, water, biodiversity, conservation of natural and cultural resources and sustainable development of rural areas. Activities are focused on methods and models for anticipating future driving forces of agricultural systems to develop adaptive agricultural management including organic farming, assess impacts of agricultural management on agronomic performance and long-term sustainability, and support decision making for agricultural policy.

One of the key research areas is to develop organic farming systems across Europe.

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