



SUMMARY REFLECTIONS

ORGANIC SECTOR AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEMS

The Agricultural Knowledge and Innovation Systems (AKIS) for the organic sector is well established, with strong advisory services from organic sector organisations as well as public bodies, and a dedicated research programme since 2001. The main weakness is the lack of national coordination between knowledge creation, advice, vocational training and education for farmers and other organic operators, including processors. Fragmentation results in not well functioning knowledge flows between regions and between actors.

As for the organic aquacultural sector, the KIS landscape for organic aquaculture is complex and characterised by a lack of coordination and innovation. While many advisory agencies exist, most of them offer support to conventional operators on issues relating to retail, processing and import. Only few certification organisations support the organic and in-conversion producers.

Regarding organic food processing and retail, a range of important actors are identified: organic farmers associations, NGOs, processing associations, private advisory service providers, public as well as private research institutes, press/media. Besides AKIS actors, there are two private actors specifically focussing on processing and retailing, AOeL and BNN.

GENERAL INFORMATION

MAIN CULTIVATED CROPS



Cereals

1



Plants Harvested Green

2



Industrial Crops

3

CROPPING PATTERN (% OF UAA)



Arable Land

70.3%



Permanent Grassland

28.5%



Permanent Crops

1.2%



CONTRIBUTION OF AGRICULTURE TO ECONOMIC OUTPUT

1.05 % (2022)



CONTRIBUTION OF AGRICULTURE TO EMPLOYMENT

1.22 % (2022)



UTILIZED AGRICULTURAL AREA (UAA)

16,578,460 Hectares (2020)
46.36 % of Total Area (2020)



ORGANIC SECTOR OVERVIEW

Germany has a long tradition of organic farming, though the organic land area accounts for only around 11% of the utilised agricultural area (UAA). Organic agriculture has remarkably grown in Germany between 2001 and 2021, with the organic area increasing by 183%. Regarding its total value, the organic market is the largest in Europe, but Germany lags behind other countries in terms of share of retail sales (7% in 2021 compared to 13% in Denmark). Germany has a target of 30% organic area by 2030.

The organic aquaculture sector in Germany shows strong fluctuations between years. In 2020, 6.746 metric tons (mt) of organic aquaculture products were produced, ten times the amount produced 5 years earlier in 2015 (621 mt). In 2019 already 16% of total aquaculture production in the country were organic (EUMOFA). The most important species is mussel (6.500 mt/>95% in 2020). Other important organically produced species are trout (250 mt) and carp (15 mt) in 2020 (EUMOFA).



GROWTH OF ORGANIC AREA (2001-2021)
183%



AQUACULTURE PRODUCTION
4,361 Live Weight Tonnes



GROWTH OF ORGANIC RETAIL (2001-2021)
488%



NO. OF PRODUCERS
36,307



EXPORTS AND IMPORTS
N.A. / N.A.



NO. OF PROCESSORS
19,536



DOMESTIC CONSUMPTION
181€/Person



NO. OF IMPORTERS
2,016

MAIN CROP TYPES

1
CEREALS

2
PULSES AND PROTEIN CROPS

3
OILSEEDS

SUPPORTING STRATEGIES, POLICIES & REGULATIONS

The AKIS system in Germany integrates a wide range of actors including regional (Bundesland) and federal public administrations, private industries, agricultural organisations and NGOs. While the federal government mainly plays a coordination role, responsibility for most AKIS activities lies with the 16 German regions. The Future Strategy for Organic Agriculture (ZÖL), first developed in 2017 and similar to a German Action Plan for organic farming, has been updated in consultation with the sector. Since 2001, there has been a federal R&D programme in the field of organic farming, the 'Bundesprogramm Ökologischer Landbau' (BÖL). This programme puts a great emphasis on knowledge exchange, but its funding has varied greatly over time.

The German organic aquaculture has been regulated since 1996. Promotion of organic standards by association such as Naturland has helped to acknowledge and meet the needs of organic producers. The governments have provided support to aquaculture through a wide range of policies aiming to maintain a certain employment level, to improve animal welfare and ensure the sustainability of the sector. The European Maritime, Fisheries and Aquaculture Fund (EMFAF) 2021 - 2027 Programme for Germany is key for the future development of the sector, with 69 million EUR allocated to sustainable aquaculture and processing.

KEY COMPONENTS & FUNCTIONS OF AKIS FOR ORGANIC

KNOWLEDGE CREATION, RESEARCH & INNOVATION

The responsibility for governing, funding, and implementing public agricultural research is divided between the federal government and the regional authorities. The federal research programme for organic farming BÖL is practice-oriented and focuses on knowledge creation as well as exchange between research and practice. The EIP-AGRI measure of the CAP has been implemented across the country since 2014 (with regional differences in thematic focus and operation groups supported). Around 16% of the more than 300 operational groups funded so far have addressed topics relating to organic farming.

The main actors in agricultural research are universities, federal and regional government research institutes, other non-university and private research institutes, and the Chambers of Agriculture. The most important knowledge centres are the federal public research institutes (e.g., Thünen Institute) and universities, although a few private institutions also play an important role, such as Naturland.

The actors and themes are coordinated by the Deutsche Agrarforschungsallianz (DAFA). Its thematic forum on organic food and farming and the organic research strategy that has developed have been taken into account in the development of the German Organic Farming Action Plan 2023 (ZÖL). There are easily accessible information hubs for stakeholders.

ADVICE AND CONSULTANCY

Providing advice for farmers in Germany is the responsibility of the regions, whereby public and private systems co-exist, funded either by CAP, paid fees or other funding streams, with regional differences in public/ private dominance. Organic farmers organisations also provide advice. Availability for organic is mainly good nationwide, but with a structural deficit in the East. The focus is often on technical issues. In aquaculture, advisory services for organic or in-conversion producers mainly come from a few certification organisations. Limited support is offered to organic producers in relation to market information and business development.

EDUCATION AND TRAINING

Education and training are the responsibility of the regions. The dual vocational training system combines farm-based training with attendance to vocational schools (Berufsschulen), but the provision for organic agriculture is not well developed. Advanced training takes place at technical colleges (Fachschulen) leading either to a certificate as "Meister" or as a technician (Techniker). There are also a few technical colleges on organic agriculture. Higher education in agriculture is offered by 22 universities. There are targeted programmes or modules with a clear focus on organic farming.

The network of Organic Demonstration Farms is mainly targeting the general public and also farmers. Several public and private actors offer a range of short courses related to organic farming.



CONCLUSIONS

The main weakness of AKIS for organic relates a lack of national coordination, particular regarding the link between knowledge creation, advice, vocational training and education for farmers and other organic operators. There are gaps in funding for research and innovation to meet the knowledge needs of the organic sector. Connections among consultancy and research exist but could be improved and there is a lack of researchers in preparing knowledge for practice and in training advisors. Funding in the various structures may not be sufficient to cover needs in line with growth targets.

There are no concrete policy objectives targeted at organic aquaculture neither in the Common Agricultural Policy Strategic Plans (CAP SP) or in the political plans addressing SDG 14. AKIS for organic aquaculture is not mentioned in policy targets. There is a lack of funding for research in organic aquaculture. Generally, knowledge exchange with practitioners should be improved. Research results are difficult to implement also because of a lack of practice-oriented research and of a central innovation hub for organic aquaculture. Topics connected with organic aquaculture are neglected in curricula. More central coordination is needed considering the remarkable growth of the organic sector. So far, the need to implement an effective knowledge and innovation system for organic aquaculture is not addressed by national policies.

FIND OUT MORE HERE

[Deliverable D1.1 Assessment of Knowledge and Innovation Systems for Organic Agriculture, Aquaculture and Value Chain Actors](#)



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