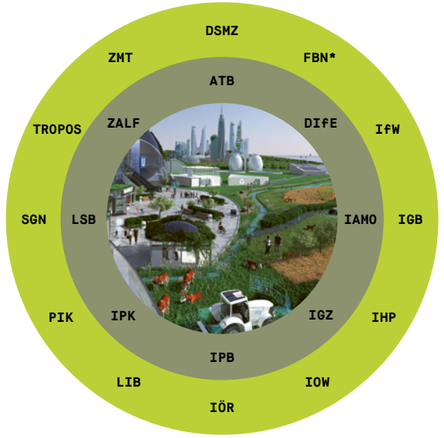
Leibniz institutes with research programmes that focus on agricultural, food and nutrition research *(inner circle)* and Leibniz institutes in adjacent subject areas *(outer circle)*



DSMZ	Leibniz-Institute DSMZ – German Collection of Microorganisms and Cell Cultures
FBN	Research Institute for Farm Animal Biology (*guest institute)
IfW	Kiel Institute for the World Economy
IGB	Leibniz Institute of Freshwater Ecology and Inland Fisheries
IHP	Leibniz Institute for High Performance Microelectronics
IOW	Leibniz Institute for Baltic Sea Research
IÖR	Leibniz Institute of Ecological Urban and Regional Development
LIB	Leibniz Institute for the Analysis of Biodiversity Change
PIK	Potsdam Institute for Climate Impact Research
SGN	Senckenberg Society for Nature Research
TROPOS	Leibniz Institute for Tropospheric Research
ZMT	Leibniz Centre for Tropical Marine Research

Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB)

German Institute of Human Nutrition Rehbruecke (DIfE)

Leibniz Institute of Agricultural Development in Transition Economies (IAMO)

Leibniz Institute of Vegetable and Ornamental Crops (IGZ)

Leibniz Institute of Plant Biochemistry (IPB)

Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)

Leibniz Institute for Food Systems Biology at the Technical University of Munich (LSB)

Leibniz Centre for Agricultural Landscape Research (ZALF)

Selected collaborative research projects coordinated by Leibniz institutes in the field of agriculture, food and nutrition

Project	Format
Leibniz Innovation Farm for a sustainable bioeconomy www.leibniz-innohof.de/en	Research infrastructure and living lab
Leibniz Strategy Forum on Sustainable Agri-Food Systems www.leibniz-gemeinschaft.de/en/about-us/strategy-and-science-policy/strategy-forums	Strategy format
Leibniz ScienceCampus Phosphorus Research Rostock www.wissenschaftscampus-rostock.de	Local partnership with universities
Leibniz Research Network on Biodiversity www.leibniz-biodiversitaet.de/en	Research network
Leibniz Research Network “Green Nutrition – Healthy Society” https://www.leibniz-gemeinschaft.de/en/research/leibniz-research-networks/green-nutrition-healthy-society	Research network
FAIRagro (NFDI) www.fairagro.net	Research data infrastructure
Agricultural Systems of the Future (various projects) https://agrarsysteme-der-zukunft.de/en/coordination	Coordination Office of the BMBF funding programme
Online knowledge platform www.quer-feld-ein.blog	Information platform

Published by:
President of the Leibniz Association
Martina Brockmeier
Chausseestraße 111
10115 Berlin
info@leibniz-gemeinschaft.de
www.leibniz-gemeinschaft.de
Editors: Frank Ewert (ZALF), Barbara Sturm (ATB), Steffen Abel (IPB), Alfons Balmann (IAMO), Jens Freitag (IPK), Eckhard George (IGZ), Matthias Premke-Kraus (Leibniz Headquarters), Veronika Somoza (LSB), Petra Wiedmer (DIfE)
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Leibniz Association

Leibniz Competence: Agricultural, Food and Nutrition Research

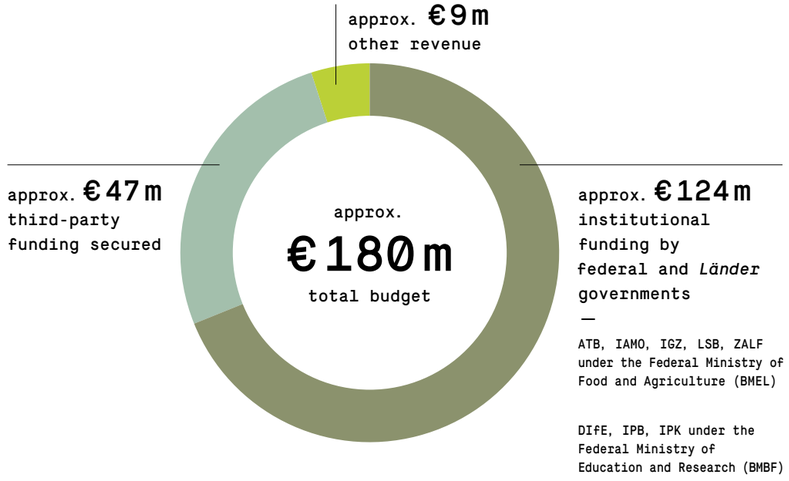
The agricultural, food and nutrition sector is facing huge **social and environmental challenges:** climate change, species extinction, food security, and resource conservation and environmental protection. Fundamental changes are needed in our agri-food system to **make production and value networks sustainable**. This transformation will only be successful if all areas of the agri-food system are involved, and if their interconnections at national and global level are taken into account. On the production side, new technologies related to digitalisation including robotics and mechanisation, and to breeding offer great potential, but need to be researched and implemented. At the same time, production needs to be more closely linked to dietary issues and the demands of consumers. Healthy foods for which there is acceptance and demand among consumers are an integral component of bioeconomy value networks.

Research in the field of agriculture, food and nutrition is pivotal for the success of this radical transformation. Future scenarios can indicate promising transformation pathways. However, all relevant value network actors and stakeholders must be involved – from production to consumption, as well as representatives from governments, academia and civil society. **New inter- and transdisciplinary research approaches established in living lab format** can initiate the required changes. Research institutions create the necessary knowledge base on the complex interrelationships in the agri-food system, and contribute their insights to the development of technical and social innovations.

The Leibniz Association with its eight institutes **specialising in agriculture, food and nutrition** is excellently placed to play an essential, independent role in this transformation process. Moreover, these institutes have been collaborating closely with institutes in adjacent subject areas for many years.

The **fields of competence of the eight Leibniz institutes** comprise the development of sustainable plant production systems – in an agricultural landscape context at ZALF and in horticulture at IGZ. ATB's focus is on the development and effective use of technologies, while IPK and IPB study genetic and biochemical connections. ATB also researches procedural and technological aspects of bioeconomy value networks. In the food domain, LSB conducts research on sensory food quality and on the impact of chemosensory active food compounds on the metabolic processes of plants, animals and humans. DIfE studies the impact of diet on human health. IAMO and ZALF look at economic and institutional issues of the transformation of agri-food systems.

Key figures for agricultural, food and nutrition research in the Leibniz Association (Leibniz data query on Joint Initiative for Research and Innovation 2021)
Reference year: 2020



43 professorships
of which 39 joint
appointments with
universities

of which
507
in peer-reviewed
journals

There are close collaborations with other Leibniz institutes on adjacent topics: on agriculture and climate change with PIK, and on the role of aerosols with TROPOS, on interrelationships with biodiversity with LIB and SGN, and with micro-organisms with DSMZ, on the development of integrated agri-food systems, including aquatic and marine systems, with IGB, IOW and ZMT, on issues relating to adapted land use planning through to interrelationships in the Earth system with IÖR, on economic contexts with IfW, and on developments in the field of digital technologies, such as sensors, with IHP.

The Leibniz Association offers a range of different formats for these collaborations: Research Alliances, ScienceCampi, networks and strategy forums in which the agri-food research institutes play a prominent and partly leading role. Here and in other national and international collaborations, they have strong partnerships with universities and non-university institutes and federal research institutes. The research activities range from knowledge-oriented research, e.g. in DFG-funded Clusters of Excellence, Collaborative Research Centres and Research Units, to large collaborative research projects within national and European funded programmes, and to innovation projects with relevant stakeholders.

In the future, the Leibniz institutes will continue to strategically develop their **interdisciplinary collaboration** in the areas of agricultural, food and health sciences, economics and social sciences, and climate, environment and biodiversity research. They already play a leading role in integrated systems research on the social challenges associated with the transformation of the agri-food system. Core objectives for the coming years are to consolidate this position, further enhance the unique scientific strength and increase international visibility. In view of the complexity of the challenges, important focus areas are the development of new research methods and the coordinated development and use of experimental research and data infrastructures.