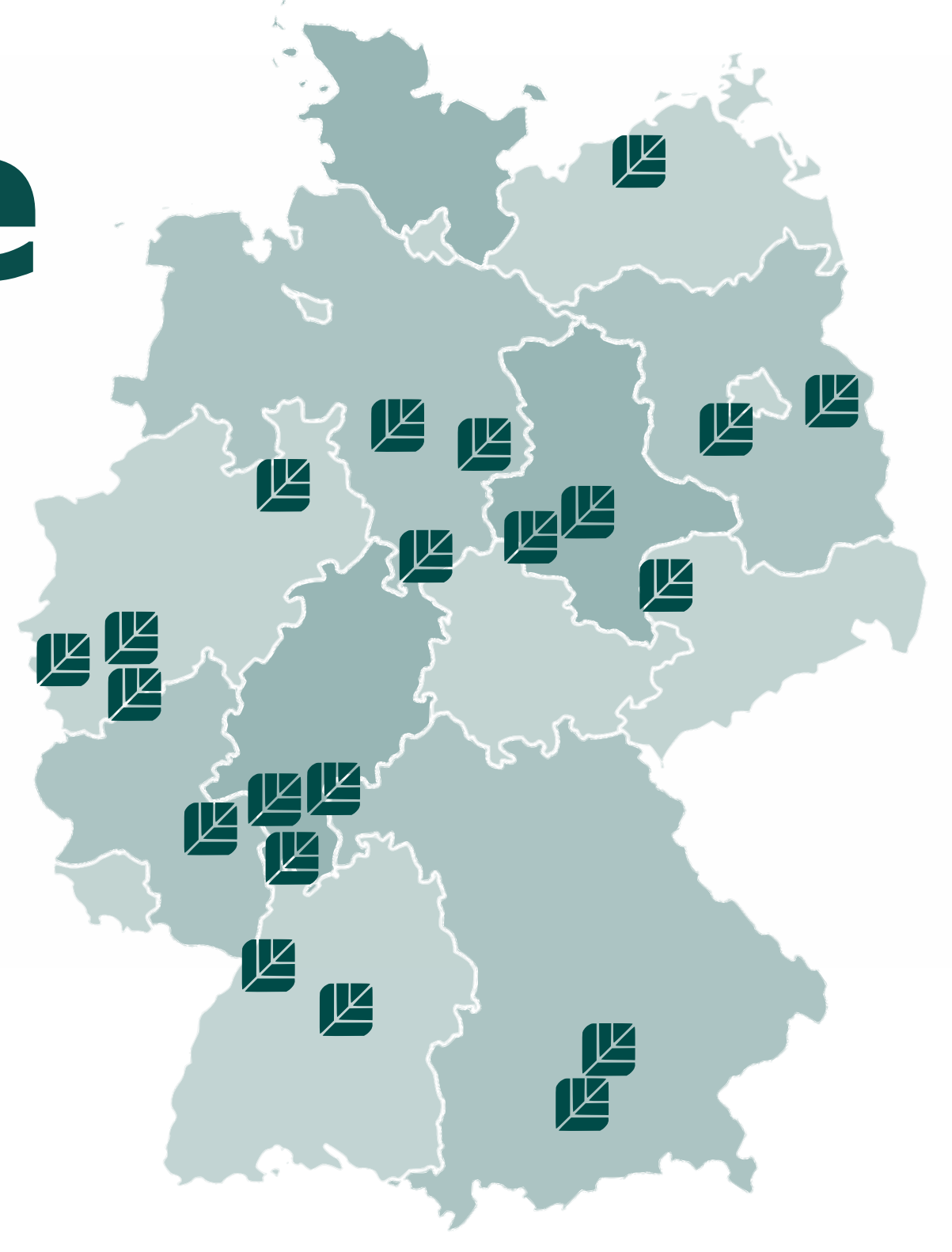# FAIR Data Infrastructure for Agrosystems

Frank Ewert, Senthold Asseng, Franziska Boehm, Til Feike, Juliane Fluck, Jan-Henrik Haunert, Florian Hoedt, Matthias Lange, Birte Lindstädt, Daniel Martini, Jochen C. Reif, Matthias Senft, Xenia Specka, Ulrike Stahl, Björn Usadel and Claus Weiland

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FAIRagro aims to offer researchers in the field of agrosystems FAIR and quality-assured research data management (RDM). Agrosystem research requires an approach that integrates a broad range of relevant disciplines from genetics and breeding to crop, soil and geo-sciences. We focus on the generation, publication and access of relevant data, innovative RDM services and modern data science methods in the context of the German National Research Data Infrastructure (NFDI).

Our Use Cases

Research data in the agrosystem area covers different scales and data types ranging from satellite data of regions to genetic data of individual plants. This diversity and the respective challenges in RDM are addressed by our six flagship use cases:

"Integrated modeling"
- Software tool for automated data search, transfer, conversion and plausibility check for input and output data of crop models

"Agronomy"
- FAIR datasets for model calibration of crop-soil nitrogen models
- Easy scaling and aggregation of data including uncertainty quantification

"Long-term experiments"
- Metadata model and publication guidelines for LTE data
- Published LTE data usable for models

"Pest & diseases"
- Guidelines for standardization of yield loss trials
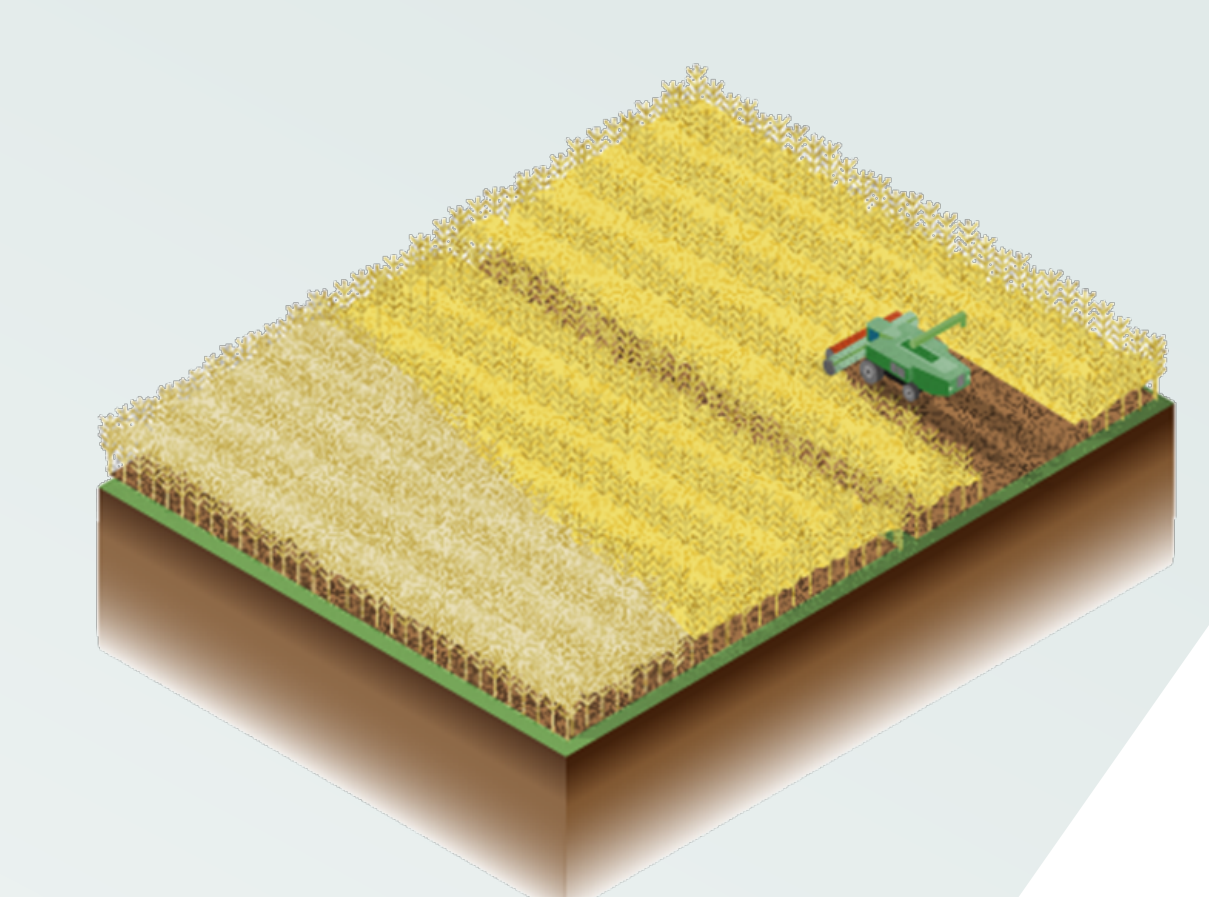- Catalog of IPM-related data, including experiments, surveys and auxiliary data

"Sensor systems"
- Publication and visualisation of a benchmark dataset of complete field phenotyping data suitable for machine learning approaches

"Breeding"
- Guideline for curating genomic and phenotypic data
- Publication of genotype × location × year × management prediction model and its output

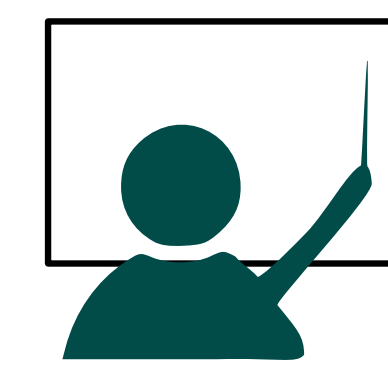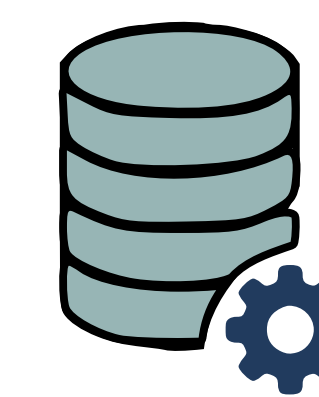## Services for You

FAIRagro Portal
- Central search hub
- Helpdesk

Training
- Training & education
- Guidelines

User-friendly infrastructure
- Networking of federated research data repositories
- Search & inventory
- Data integration

Data Steward Service Center
- Hands-on agricultural RDM
- Data management plans
- Data publication

Visit us on
FAIRagro.net
for more Information

Your Input

Additional use case ideas
Submit a new use case via our onboarding process to integrate your needs and disciplines. New use cases can extend existing ones, cover a new research topic in agrosystem research or even enter new disciplines in agricultural science.

Community board membership
Be part of our community board to assess submitted use cases and thus determine future developments.

Share your opinion with us
Participate in our surveys, workshops and hackathons, give feedback to our provided tools and help with your specific expertise to make our services better and more user-friendly.