

Food Systems Implementation Network Manifesto - GO FAIR

to advance a global data ecosystem for agriculture and food by implementing FAIR data and services

Agri-food systems are facing unprecedented socio-economic, and environmental challenges to feed 2 billion more people by 2050. In order to effectively address these pressing global challenges we need better availability of data. The heterogeneous nature of many data sources force us to think about interoperability of the data for better reuse, both by humans and machines. For better reuse of data, we need to achieve a shared understanding of how we describe and publish data, in a semantically grounded manner.

Overarching Principle of Operation

The IN will leverage the ecosystem of current organizations and projects willing to commit to the following guiding principles for implementing the FAIR data principles in Food Systems:

- Control over data. With the Food Systems IN we empower farmers, consumers, public or private organisations to manage, safeguard, and share their data.
- Reusable data. Members develop and implement shared digital infrastructures based on standards and protocols adhering to the FAIR principles.
- Distributed and federated solutions. The envisioned architecture of the digital infrastructures relies on distributed and federated learning and decision support where possible. Data stay where they are and are processed at their location of origin, unless distributed solutions are not (yet) available or do not suffice.
- Responsible use of farm data and consumers data. We will act to enable and ensure the responsible use of personal data by adopting international principles and regulations, including the FACT principles (Fairness, Accuracy, Confidentiality, Transparency), privacy-by-design, privacy-by-default, or the General Data Protection Regulation (GDPR).
- Ethics-by-design. We commit to optimise the facilities to judge the ethical aspects of research questions and enable blocking and reporting of studies that abuse personal data.
- An open ecosystem for innovation in food systems. Everyone subscribing these guiding principles can contribute to develop the FAIR data principles in food systems. We will adopt and develop open standards and protocols. We strive to avoid single-vendor solutions that create single points of failure for any critical component of the shared infrastructure.
- Registration at the source. Data should be captured only once, promoting efficiency by avoiding repetitive work. Copying or moving source data by authorised individuals should be made explicit in the data provenance and limited as much as possible.
- Machine-readability at the core. We focus on creating machine-readable and interpretable data, metadata, and services, aiming for maximal interoperability between diverse systems. Machine-readable data will be accompanied by human-readable versions in different languages for different audiences (professionals, citizens).

This manifesto is signed by a broad range of organizations who came together in different data related engagement structures to implement FAIR data and services in Food Systems research and to work towards a global data ecosystem for agriculture and food. We consider this joint statement a way to speak with one voice on a number of critical issues that are of generic importance and on which we feel we have reached consensus. We also commit to comply with the Rules of Engagement of GO FAIR Implementation Networks.

The purpose of this implementation network is to support the implementation of FAIR principles in agri-food sciences, in providing guidelines, tools, methods, etc. with specific efforts towards achieving

semantic interoperability. To this end, the Food Systems IN will boost the adoption and implementation of recommendations from existing initiatives such as RDA working groups, GODAN working groups, and W3C.¹

We will work on the following objectives:

- To advocate for FAIR data principles in data sharing policies.
- To foster the continued implementation of FAIR principles based on existing recommendations and if needed support to create new ones.
- Facilitate agreement on the use of vocabularies, standards and protocols.
- To disseminate best practices to a large community of practitioners.

We will produce:

- A collection of tools, resources, and methodologies
- A collection of use cases
- A collection of dissemination products

Primary Tasks

- In 2019, the Food Systems Implementation Network will launch as a GODAN Working Group and will be open to anyone who agrees to this manifesto.
- Identify existing recommendations relevant to our objectives. If concurrent ones exist, then make choices. If new ones are needed, set them as challenges to address in the IN.
- As a source of inspiration The Farm Data Train (FDT) will be used by Food Systems IN members to explain how the FAIR data principles in food systems may be implemented.

Manifesto

Download the Manifesto of Food Systems here.

Membership

This GO FAIR Implementation Network is open to anyone.

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¹ <https://www.rd-alliance.org/group/agrisemantics-wg>

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