SERVICESTELLE FORSCHUNGSDATEN

FAIR DATA Quick Start Guide

DATA CRUNCH

WHY SHOULD I MAKE MY RESEARCH DATA FAIR?

Your research data is valuable, because you invest energy, time and effort to generate it, analyze it and possibly publish it in the future.

Your data is also valuable to other scientists because it helps **advance science and humanity** itself.

In the course of your project you probably generate various kinds of data and although you know your data inside out when you actively work with it, you might be **overwhelmed when it comes to managing** it.

A good starting point for **research data management** in your project are the **FAIR Principles** (https://www.go-fair.org/fair-principles/). They provide **guidelines** that help you tackle your data, make it **understandable** and make it **sharable**.

WHAT DOES FAIR STAND FOR?

Findable: Data are described by **rich metadata**; (meta)data are indexed in search engines and are assigned unique **Persistent IDentifiers** (PIDs).

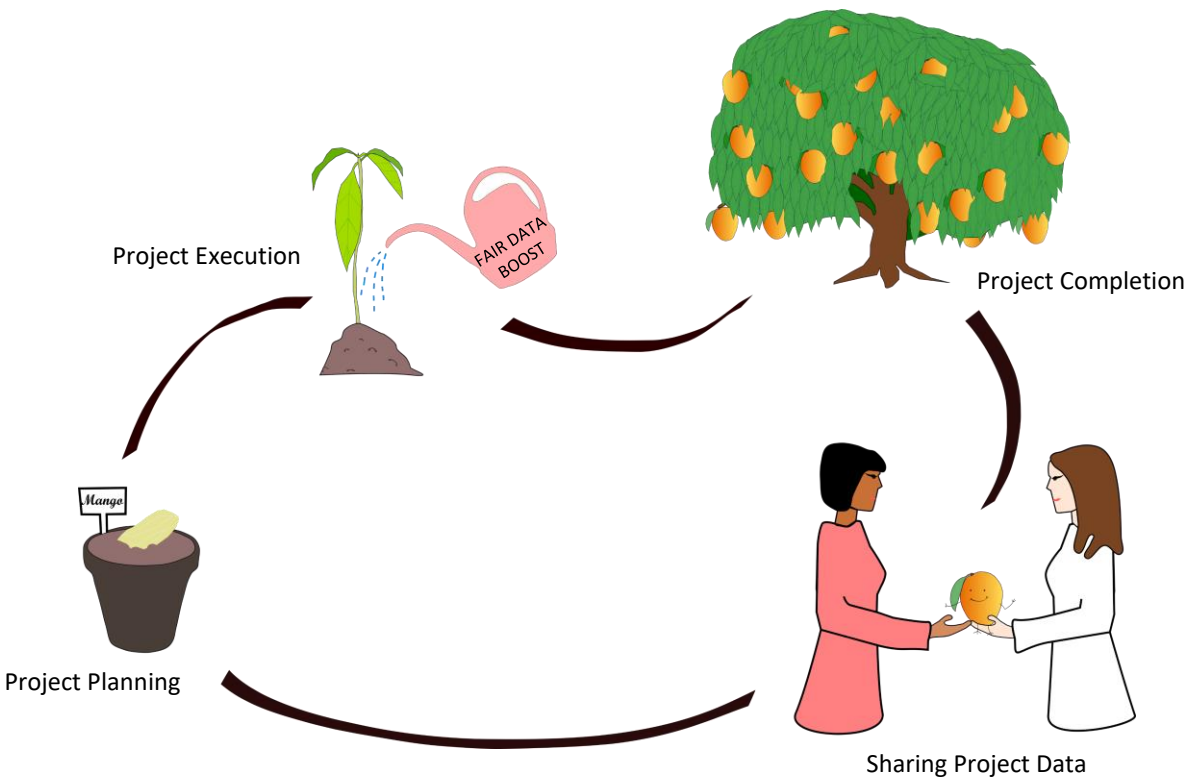
Accessible: **Access** to the (meta)data is as **permanent and browser-based** as possible; any **restrictions** on the data are **clearly defined**.

Interoperable: Whenever possible, **open formats and standards for data and metadata** are used. This enables (meta)data to be opened in different IT environments.

Reusable: The data has **open and clear licenses**; the data is described and contextualized (= **clearly documented**) so other researchers can understand, interpret and use the data.

REMEMBER! FAIR data is not necessarily open data.
Make sure your data is as open as possible but still as closed as necessary!

To ensure you and others can get the most out of your data, try to **follow the FAIR Principles in all phases of your research project life cycle**:



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QUICK START GUIDE TO MAKING YOUR DATA FAIR

Project Planning

- Get to know the Good Research Practice DFG Guidelines and the FAIR Principles.
- Write a Data Management Plan and keep it up-to-date.
- Think about legal and ethical aspects and clarify them as soon as possible.

Further reading:

- **Project planning guidelines** (internal Confluence platform): https://confluence.team.uni-bonn.de/x/rE8bC
- **Good Research Practice**: https://doi.org/10.5281/zenodo.6472827
- **FAIR Principles**: https://www.go-fair.org/fair-principles/
- More about **Data Management Plans** (internal Confluence platform): https://confluence.team.uni-bonn.de/x/rE8bC
- Decision tree for **legal aspects in Germany** (in German): https://doi.org/10.5281/zenodo.3368292
- Fact Sheet **Personal Data**: https://doi.org/10.5281/zenodo.4035991

Project Execution

- Establish folder and file naming conventions in your team, write them down and stick to them.
- Set up a routine to check for trash files and whether the files are ordered and properly named.
- Choose file formats that are open, broadly used and established in your discipline.
- Version your files and make sure to backup all your data on a regular basis.
- Document your data from the start. Prepare a readme.txt file, data dictionary and/or code book to help you keep track of how you analyze your data.

Further reading:

- **Project execution guidelines** (internal Confluence platform): https://confluence.team.uni-bonn.de/x/6FAbC
- Recommended **file formats**: https://www.ukdataservice.ac.uk/manage-data/format/recommended-formats
- **Data documentation guidelines**: https://ukdataservice.ac.uk/learning-hub/research-data-management/#document-your-data
- **README: File & Folder Schema** by MIT Libraries Data Management Services: https://www.dropbox.com/s/ritd1mwzyaz2dh6/Sample_README_fileOrg.docx?dl=0
- **File naming convention** worksheet: https://resolver.caltech.edu/CaltechAUTHORS:20200601-161923247
- **README file template**: https://www.forschungsdaten.uni-bonn.de/en/media/author_dataset_readmetemplate.txt
- **Raw data, versioning and backup**: https://doi.org/10.5281/zenodo.4041556
- Learn **git**: https://git-scm.com/book/en/v2
- **Duplicati**: A backup software recommended by the University IT and Data Center (HRZ): https://confluence.team.uni-bonn.de/x/e4xwAw
- What if you lost your data? **A risk assessment activity**: https://hdl.handle.net/2142/114425

Research Data Service Center at the University of Bonn

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QUICK START GUIDE TO MAKING YOUR DATA FAIR

Project Completion and Sharing Project Data

- Select consciously which data to preserve and share.
- Remember to check for inconsistencies in the files and file names. Clean up your data.
- Confirm that the dataset and its documentation are comprehensible.
- Make sure that you chose file formats that are open or at least widely used in your community.
- Where will you publish the data and metadata?
- Pick a license for your data and software. Will the data be open or the access has to be restricted?
- Where will you archive your dataset for the longer-term? Make sure the data is stored securely!

How FAIR is your data?: https://ardc.edu.au/resources/working-with-data/fair-data/fair-self-assessment-tool/
How FAIR is your software?: https://fair-software.eu/

Further reading:

- **Project completion guidelines** (internal Confluence platform): https://confluence.team.uni-bonn.de/x/9lAbC
- What are **metadata**?: https://data.research.cornell.edu/content/writing-metadata
- Repository Registry **re3data**: https://www.re3data.org/
- **Data and software license selector**: https://ufal.github.io/public-license-selector/
- Assistant: **Creative Commons Mixer**: https://ccmixer.edu-sharing.org/
- **Project close-out checklist** : https://resolver.caltech.edu/CaltechAUTHORS:20200519-142758925
- **Generalist Repository Comparison Chart**: https://doi.org/10.5281/zenodo.3946719
- **Research data repositories at the University of Bonn**: https://www.forschungsdaten.uni-bonn.de/en/services/data-repositories?set_language=en

DO YOU HAVE QUESTIONS? NEED MORE HELP?

GET IN CONTACT! forschungsdaten@uni-bonn.de