FAIR PRINCIPLES

GUIDELINES FOR SCIENTIFIC DATA MANAGEMENT AND STEWARDSHIP

Improve the Findability, Accessibility, Interoperability, and Reuse of 3 types of entities: data (or any digital object), metadata (information about that digital object), and infrastructure

Findable

(Meta)data should be easy to find for humans and computers

- (Meta)data are assigned a globally unique and persistent identifier (PID) (e.g., ORCID, DOI, RRID, ROR)
- Data are described with rich metadata
- Metadata clearly and explicitly include the identifier of the data they describe
- (Meta)data are registered or indexed in a searchable resource

Accessible

The users need to know how data can be accessed, including authentication and authorisation

- (Meta)data are retrievable by their identifier using a standardised communication protocol
- The protocol is open, free, and universally available and implementable
- The protocol allows for an authentication and authorisation procedure, where necessary
- Metadata are accessible, even when the data are no longer available

Interoperable

Data might need to be integrated with other data and to interoperate with applications or workflows for analysis, storage, and processing

- (Meta)data
  - use a formal, accessible, shared, and broadly applicable language for knowledge representation
  - use standardised vocabularies that follow FAIR principles
  - include qualified references to other (meta)data
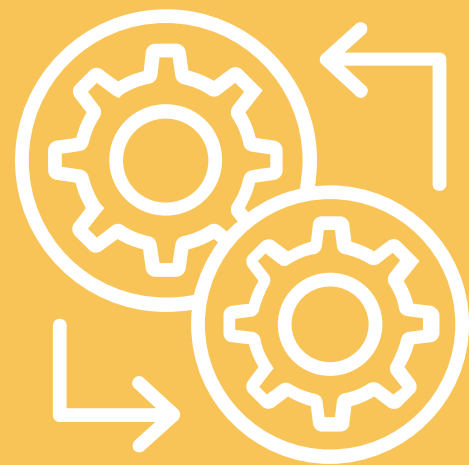
Reusable

(Meta)data should be well-described in order to be replicated and/or combined in different research settings

- (Meta)data
  - are richly described with a plurality of accurate and relevant attributes
  - are released with a clear and accessible data usage license
  - are associated with detailed provenance
  - meet domain-relevant community standards