



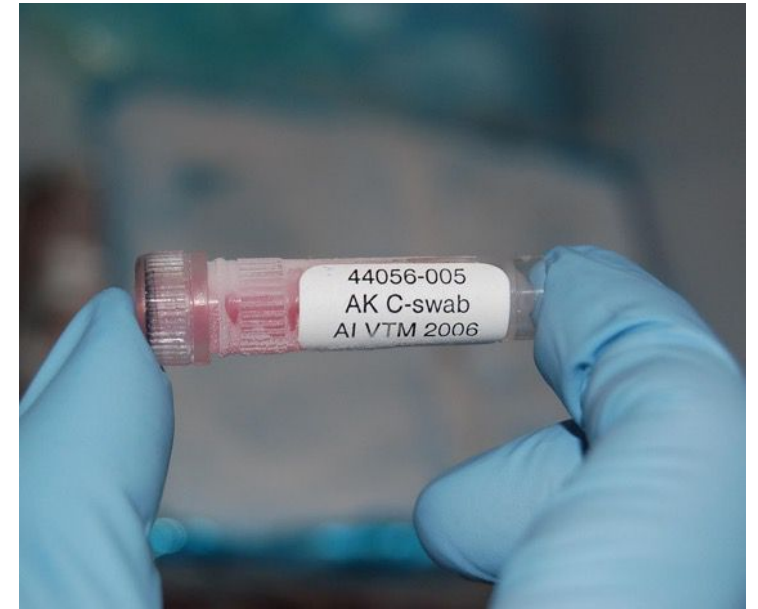
Research Data Management – Basics



Examples



Examples



WHAT?

Primary data such as...

- Experiment data
- Measurements
- Surveys, polls

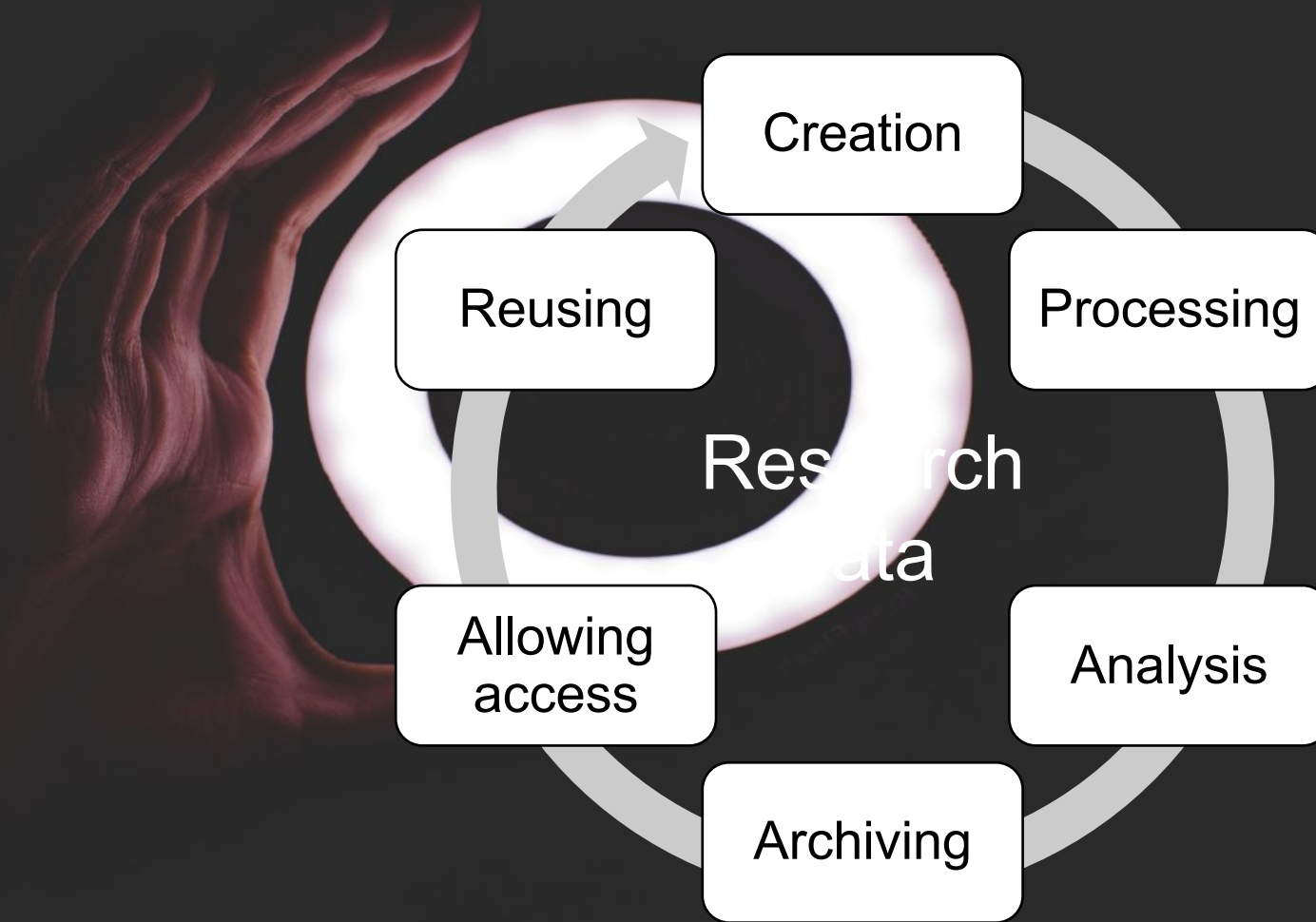
But also...

- Visualizations
- Models
- Tools

Definition

Data that arises during scientific activity (e.g. measurements, surveys, sourcing), which enable scientific work (e.g. digitized material) or which document the result of scientific work, are called research data.- [Forschungsdaten.info](https://www.forschungsdaten.info), translated

WHAT?



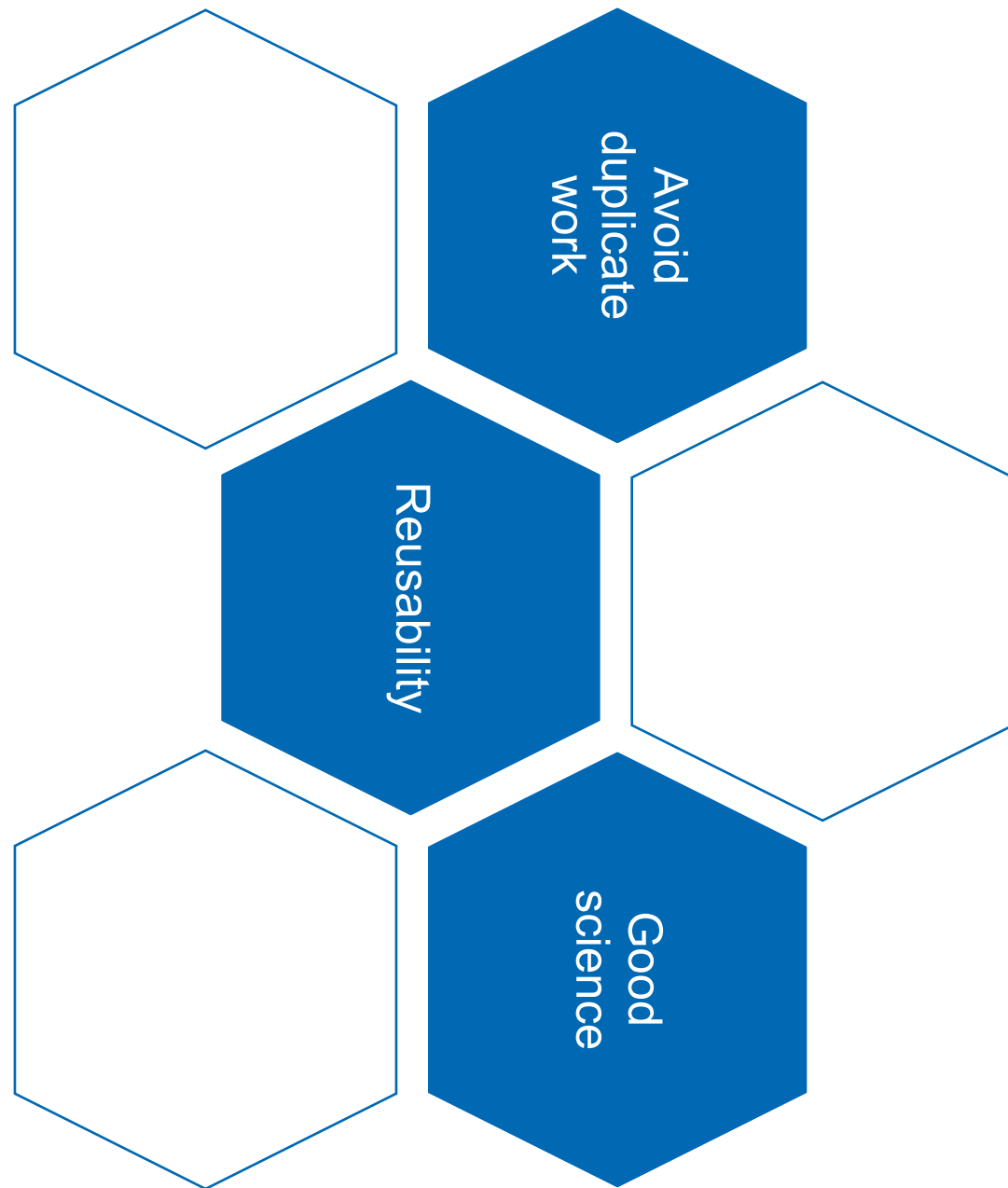
WHAT?

Universities and scientists are responsible for the **development** and **cultivation** of science.

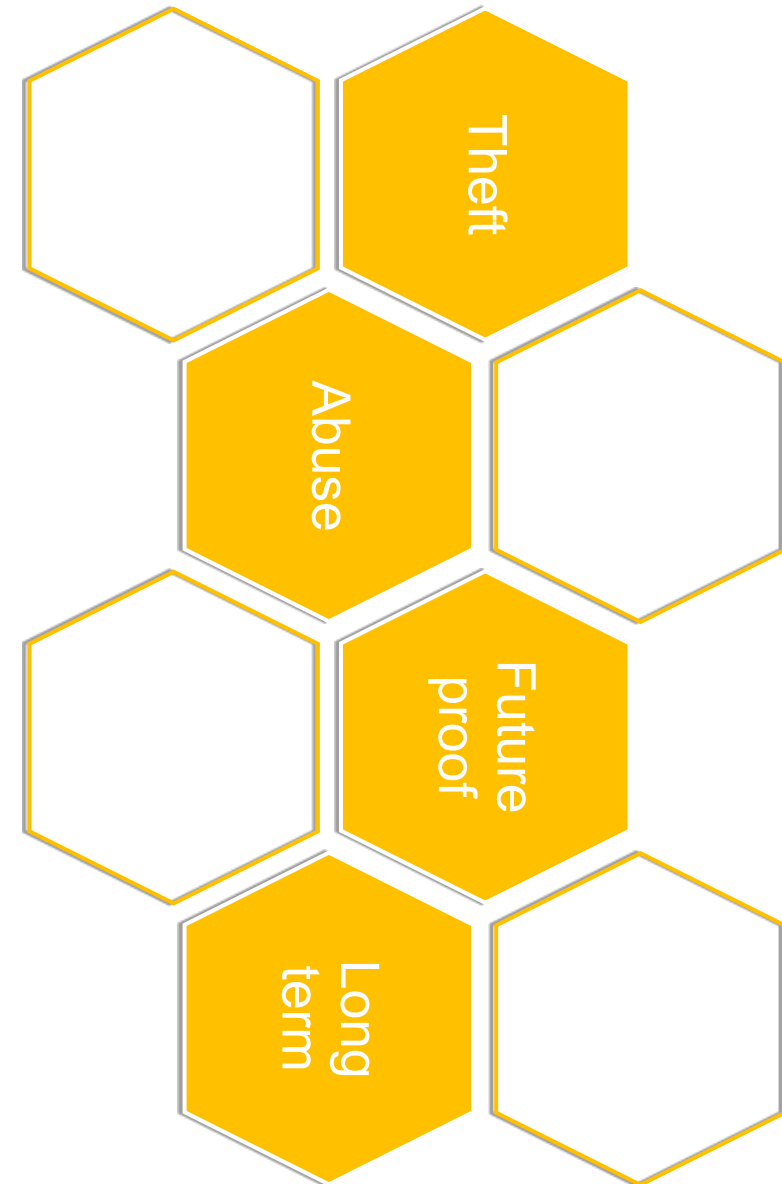
Research at universities follows scientific standards and requirements to produce **comprehensible** and **verifiable** results.

Research data management is an essential part of **good scientific practice**.

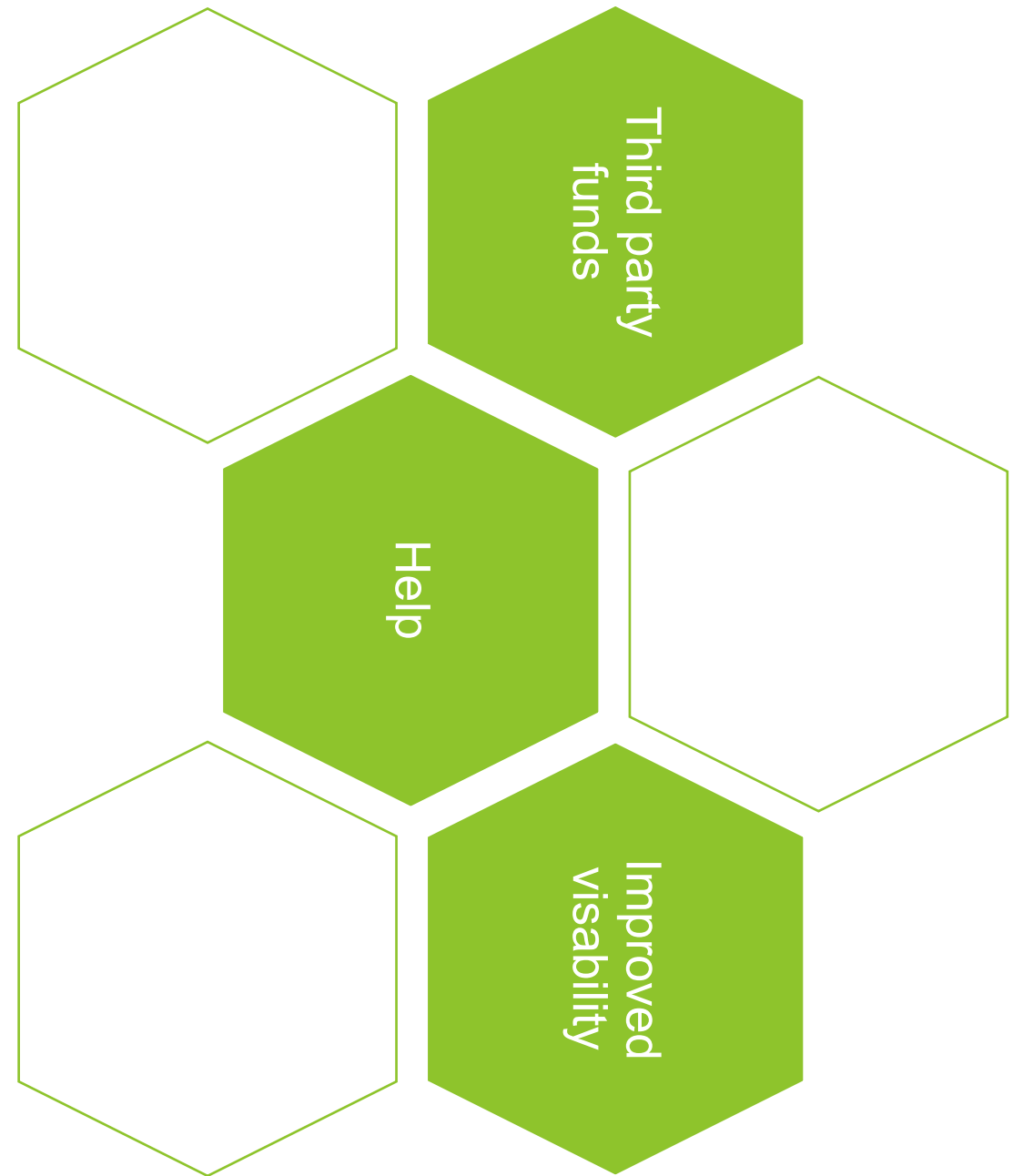
WHY?



WHY?



WHY?



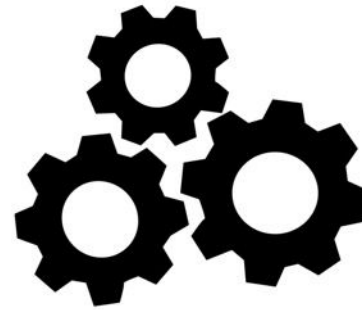
F
Findable



A
Accessible



I
Interoperable



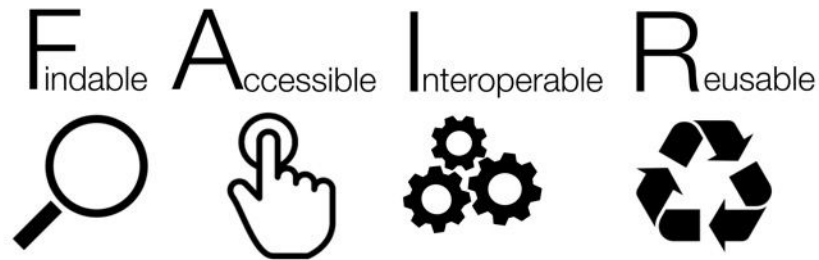
R
Reusable



I am familiar with
the FAIR principles

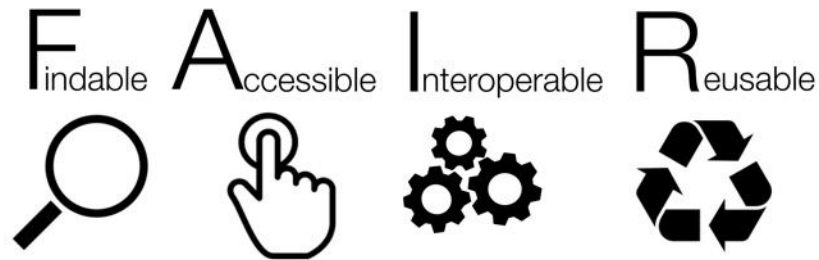
I have previously heard
of the FAIR principles
but I'm not familiar with them

I've never heard of the
FAIR principles before now



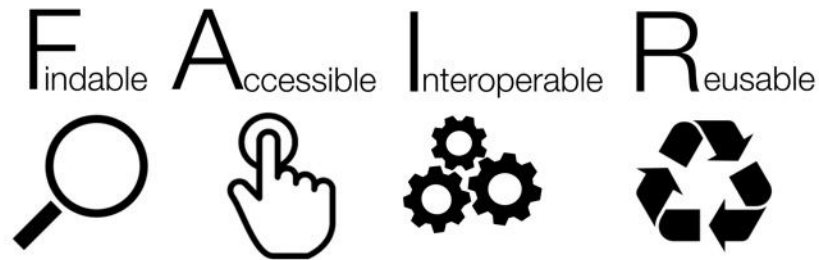
Findable:

- F1. (Meta)data are assigned a globally unique and **persistent identifier**
- F2. Data are described with **rich metadata** (defined by R1 below)
- F3. Metadata clearly and explicitly **include** the **identifier** of the data they describe
- F4. (Meta)data are **registered** or **indexed** in a searchable resource



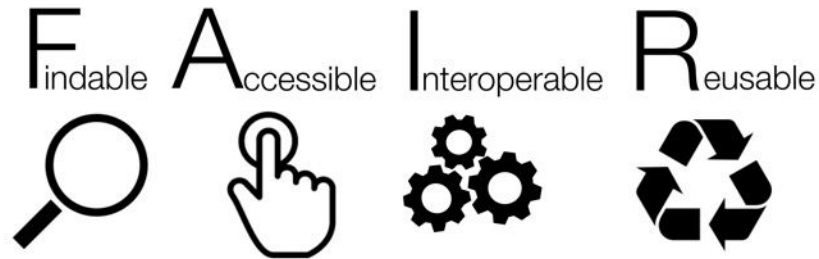
Accessible:

- A1. (Meta)data are retrievable by their identifier using a standardised communications protocol
- A2. Metadata are accessible, even when the data are no longer available.



Interoperable:

- I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (Meta)data use vocabularies that follow FAIR principles
- I3. (Meta)data include qualified references to other (meta)data



Re-usable:

- R1. Meta(data) are richly described with a plurality of accurate and relevant attributes
 - R1.1. (Meta)data are released with a clear and accessible data usage license
 - R1.2. (Meta)data are associated with detailed provenance
 - R1.3. (Meta)data meet domain-relevant community standards

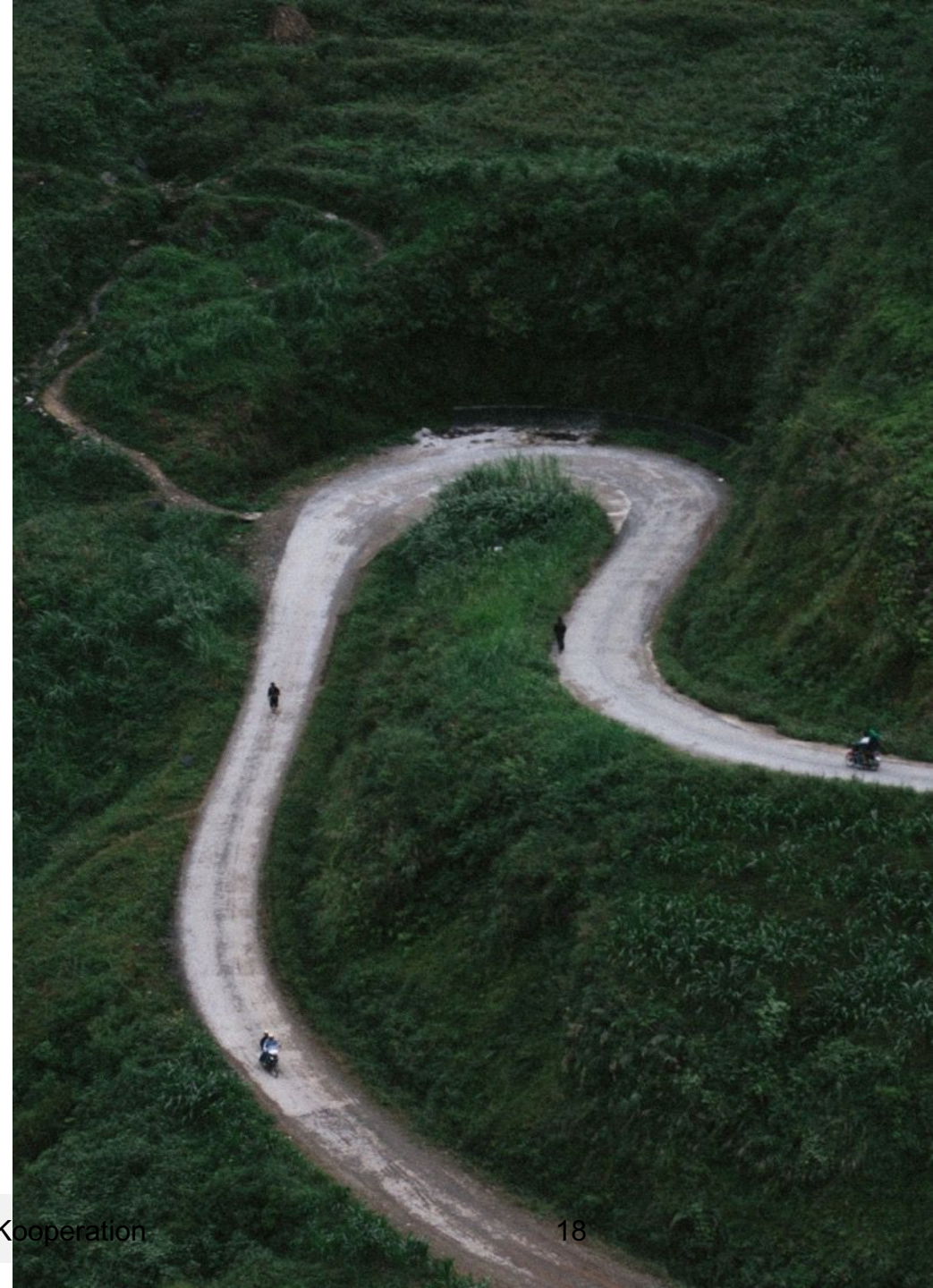
"ONE OF THE BIGGEST CHALLENGES
IN MAKING DATA OPEN IS GETTING
RESEARCHERS TO UPLOAD IT"

#FIGSHAREFEST



HOW?

1. Contact **research data management team**.
2. We create a **data management plan**.
3. We find a **good place** for your data.
4. We make sure the data has the appropriate **meta data**.
5. **Store** the data during & after your research



Additional Information

- Projekt: fodako.nrw
- Allgemein: forschungsdaten.info

References

- Slide 11
 - SangyaPundir. (2016). *English: FAIR guiding principles for data resources*. Retrieved from https://commons.wikimedia.org/wiki/File:FAIR_data_principles.jpg
- Slide 13-16:
 - Wilkinson, M. D., Dumontier, M., Aalbersberg, Ij. J., Appleton, G., Axton, M., Baak, A., ... Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018. <https://doi.org/10.1038/sdata.2016.18>
- Slide 12
 - Science, D., Hahnel, M., Fane, B., Treadway, J., Baynes, G., Wilkinson, R., ... Osipov, I.. (2018, October 22). The State of Open Data Report 2018 (Version 2). figshare. <https://doi.org/10.6084/m9.figshare.7195058.v2>

