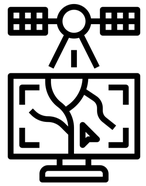
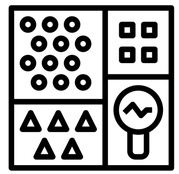
Utrecht University

Open Science and
The Faculty of Geosciences

Created by Nithinan Tatal



Created by Template



Created by Becris

GeoFOST Committee: Opening our World

Britta Ricker, Jarno Hoekman, Maarten Kleinhans, Jannis Hoch, Luc Rietveld, Annelies van Uden, Niko Wanders, Martyn Drury, Wilco Hazeleger

Role of the GeoFOST committee

The Findable, Accessible, Interoperable, and Reusable (FAIR) and Open Science movement has hit Utrecht University like a tidal wave. These efforts are not new in Geosciences. Open Geospatial information has long been pivotal for map making and information transparency.

The GeoFOST committee within the Faculty of Geosciences has **representatives from all faculties, Human Geography, Physical Geography, and from the Copernicus Institute for Sustainable Development.** Together, we discuss unique considerations the FAIR data and software movement and UU Open Science programme poses for Geosciences. We discuss existing strategies and opportunities and plan new support and outreach opportunities useful for our department.

Why does FAIR Software and Data matter in Geosciences?

When data and software are open:

- Accessible data becomes **replicable** for further use,
- Possible to peak under the hood of software packages – illuminate the black box – **compare** methods for **repeatability**
- Open data is a sign of **rigour**
- Leads to more **sustainable** and stronger science

Data are representative to specific environments and people – often open data are used repeatedly when training data in machine learning and artificial intelligence. Methods chosen to analyse data are influenced by the **epistemology** of the researcher. Opening data could bring new insights into each dataset and reduce workload in the data collection process.

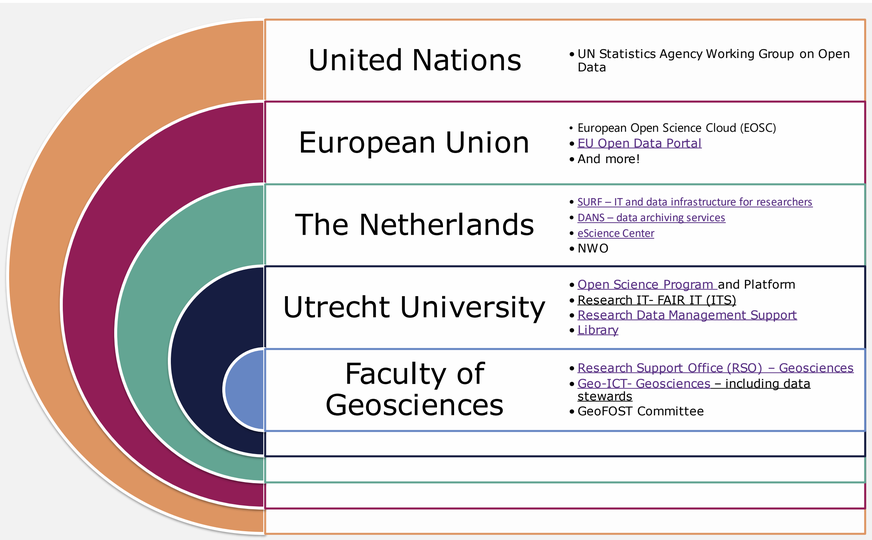
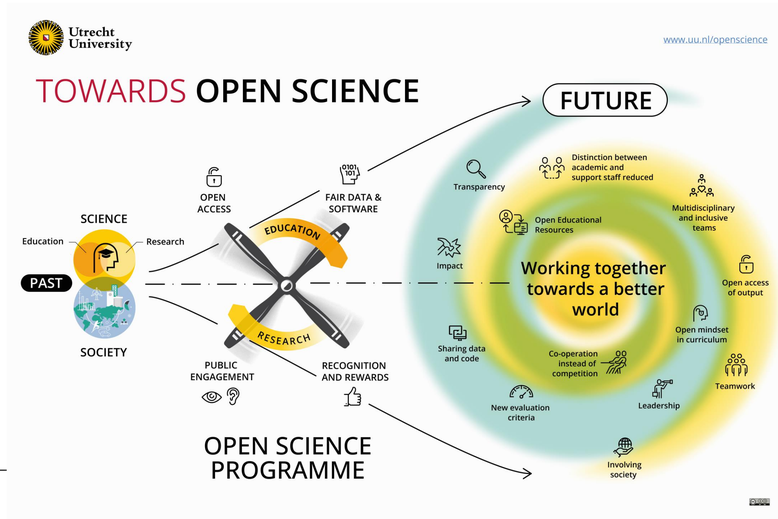


Figure 1. Open Science Ecosystem

We in Geosciences are not the only ones interested in Open Science. There is a whole ecosystem of Open Science resources and efforts, all at our finger tips. It can be overwhelming to figure out where to find the right resources. Here are a few examples for you to explore and learn more about on your own. Pro tip – the library has regular workshops about how to make your own science more open, or how to access open science in your teaching and so much more. Want to learn more about any of these open science initiatives? Access an online version of this poster and click on the links to read more about each.

View this poster online to click on links for working links to information to resources mentioned here.



How we can help you:

If you have any of the following questions, please contact GeoFOST or the Geoscience Data Stewards!

- What are the four pillars of open science at UU?
- How do I get started making sense of open science?
- What infrastructure and support is already in the faculty?
- How do I find existing FAIR data to analyse for research or for teaching?
- Do you need help finding FAIR software alternatives?
- How do I make my own data finable, accessible, interoperable, and reusable.

Do you have an idea you would like to share with us?

- Examples of your work of open data practices?
- Can you think of an idea from a departmental policy perspective that would we could implement that would help you facilitate your goals?

Open Education

- Did you know that the Open Science philosophy is also translated to educational context in the Open Education pillar of the Open Science Programme?
- What does developing and providing open education mean for you?
- Do you have examples of how you implement Open Education in your courses?

Public Engagement

- For many Geoscientists creating impact through engagement with stakeholders and/or the public is an integral part of work
- Engagement can take many different forms including co-creation, citizen science, science communication, public activities and stakeholder engagement
- On intranet you can find a guide developed by the Faculty on "How to design and organise your impact activities"

Recognition and Rewards

- Recognition and reward to academics and university staff of open science activities is key in bringing about the transition to open science
- Utrecht University has signed the DORA declaration which is a commitment to moving away from journal-based evaluations, consider different types of output and use various forms of metrics and narrative assessment
- The Faculty has implemented the MERIT system for career and promotion system to provide more room for qualitative competences and diverse results
- The MERIT system is currently being evaluated by a committee

Further Reading:

Degbelo, A. (2022). FAIR geovisualizations: definitions, challenges, and the road ahead. *International Journal of Geographical Information Science*, *36*(6), 1059–1099. https://doi.org/10.1080/13658816.2021.1983579

Kinkade, D., & Shepherd, A. (2021). Geoscience data publication: Practices and perspectives on enabling the FAIR guiding principles. *Geoscience Data Journal*, (December 2020), 1–10. https://doi.org/10.1002/gdj3.120