



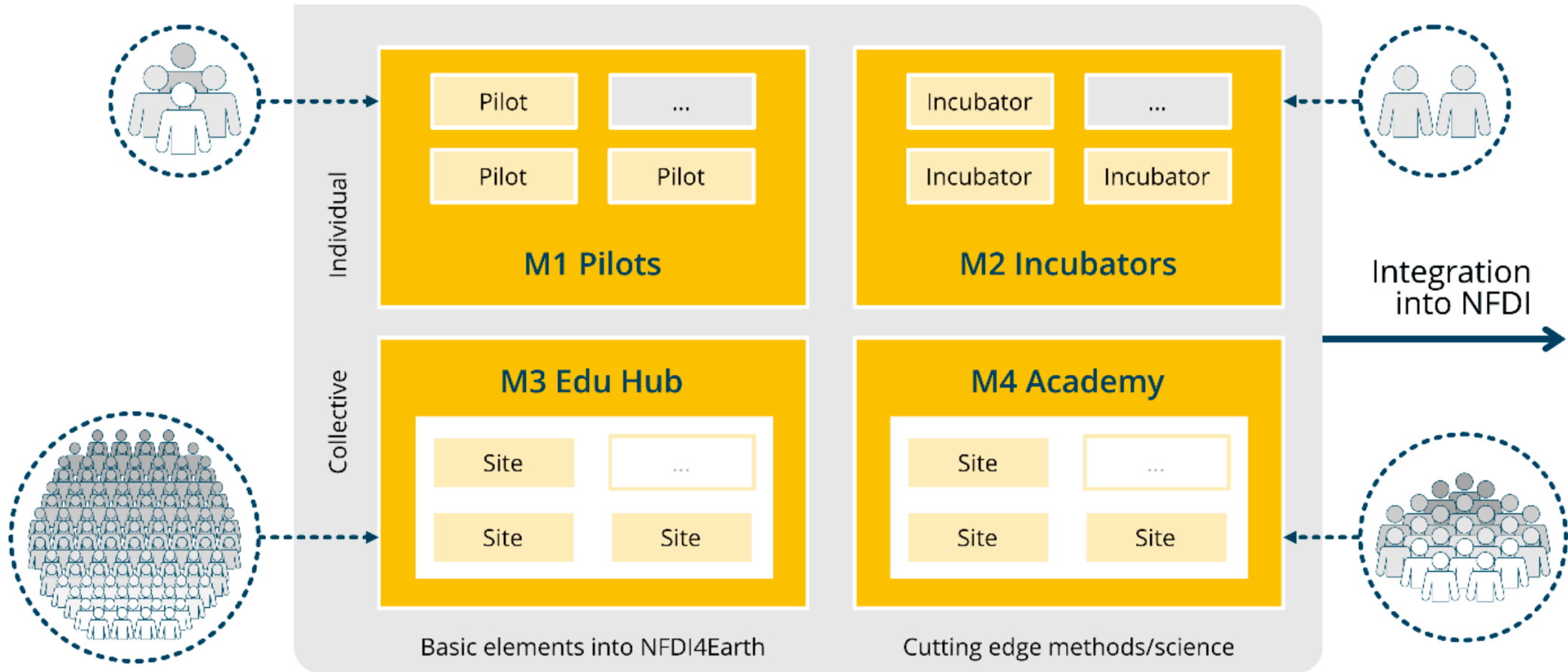
# NFDI<sub>4</sub>Earth

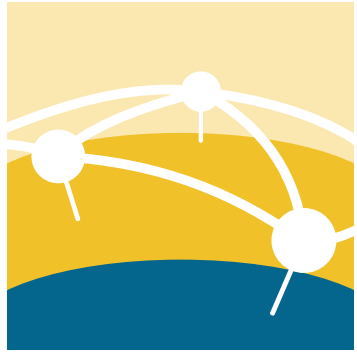
## Task Area 1: 2Participate

NFDI<sub>4</sub>Earth Plenum

June 9, 2022

# TA1 gets the community involved





**NFDI4Earth**  
**2Participate**

## **Earth System Science Pilots**

Veronika Grupp (Coordinator)  
Miguel Mahecha (Co-Applicant)

<https://rsc4earth.de/>



UNIVERSITÄT  
LEIPZIG

# Measure 1.1: Earth System Science Pilots

## Pilots are

- small agile projects (1 year)
- manifest the researchers' RDM needs
- target specific interoperability issues for and between particular ESS subdomains.
- provide blueprints for other domains
- leverage existing technologies



The screenshot shows the NFDI4Earth website with a navigation bar at the top containing links for Home, About, Participate, News, Showcase, Timeline, Testimonials, and Media. The main heading is "NFDI4Earth Pilot". Below this, there is a paragraph explaining that the development of NFDI4Earth is driven by researchers' needs and requirements for research data management according to the FAIR principles. It states that NFDI4Earth uses Earth System Science Pilots to engage the community, and these pilots stem from different domains of the ESS community, do manifest the researchers' needs and are the community's contribution to an agile development of the NFDI4Earth. It further mentions that NFDI4Earth intends to start in running up to 15 Pilots, which are collected from an Open Call, evaluated in an open review process and will become part of the new NFDI4Earth proposal. Pilots do typically run for one year and are evaluated against a set of pre-defined criteria. Once NFDI4Earth is funded by DFG annual calls for pilots will be launched.

1st Call (June 29, 2020) - Submission Deadline: July 24

**Become part of the new NFDI4Earth proposal!**

NFDI4Earth is designed as an open consortium. If you are interested in participating and shaping NFDI4Earth, we invite you to apply for a pilot.

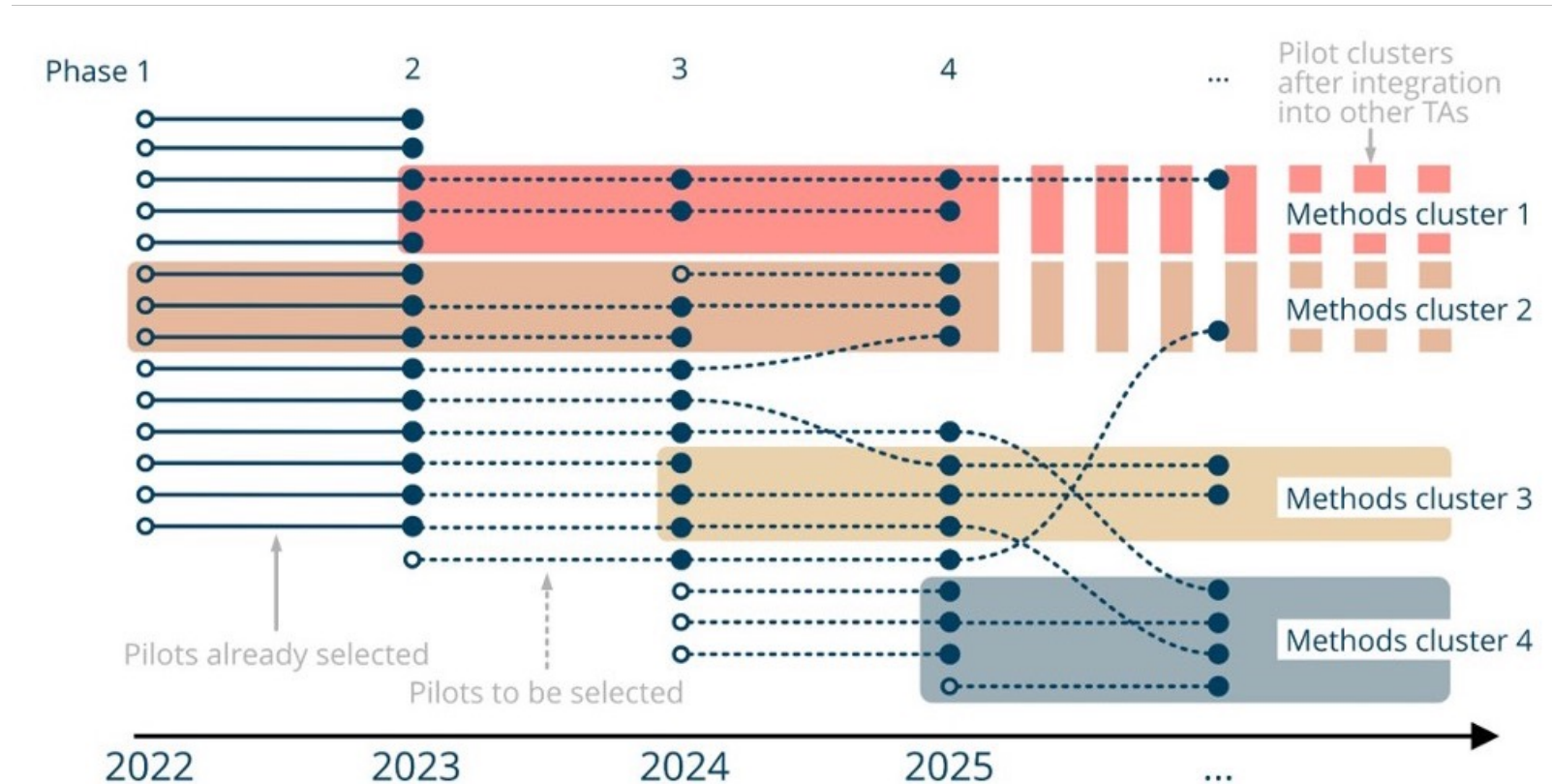
[Read the guidelines for detailed information](#)

If you are interested to apply for a pilot and have any questions, please send an e-mail to [info@nfdi4earth.de](mailto:info@nfdi4earth.de)

# Measure 1.1: Perspective for pilots

## Integration into NFDI4Earth

- innovation scouts
- become building blocks to design the specific infrastructure in an agile process
- Steering: Universität Leipzig

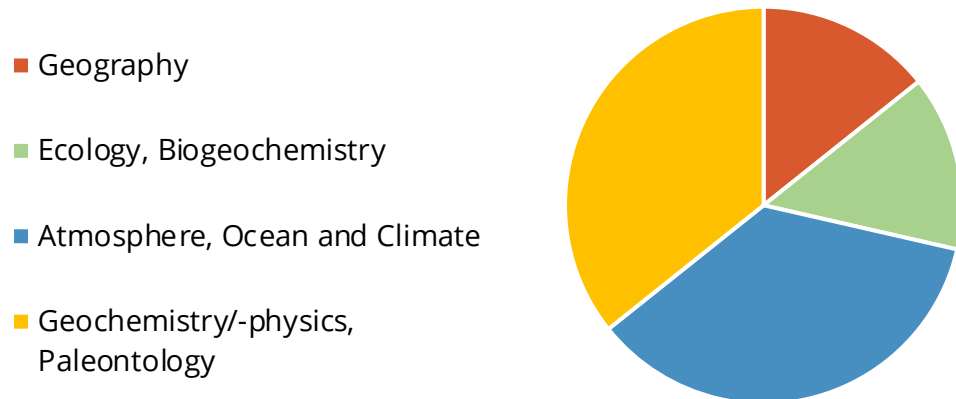


# Measure 1.1: First Round of Pilots

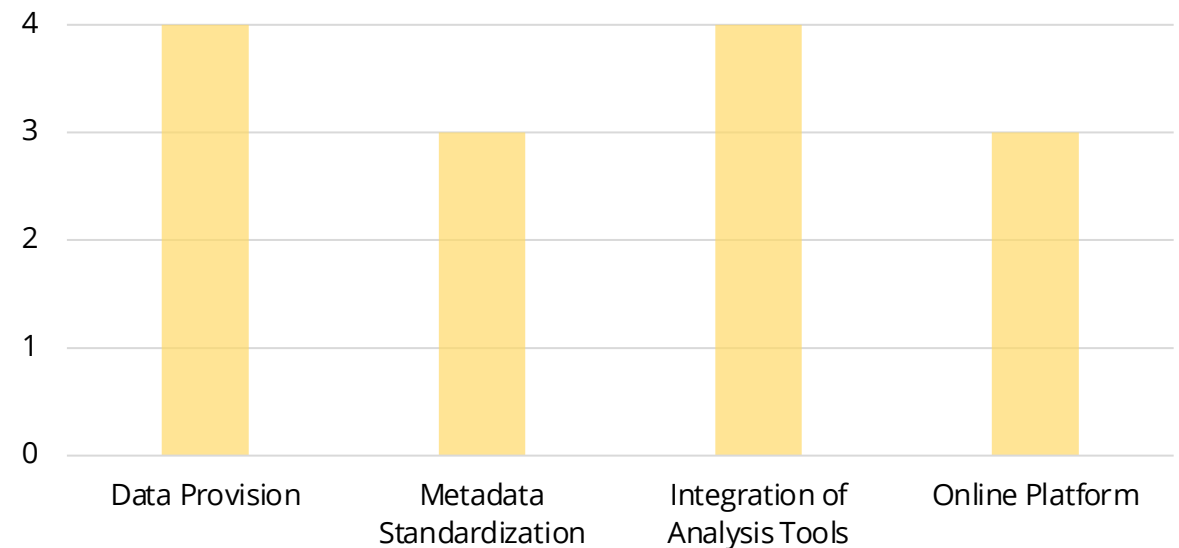
**2020:** 14 Projects selected by Co-Applicants in Open Review Process

**April 2022:** Start of the First Round of Pilots

Domains of 14 Pilots

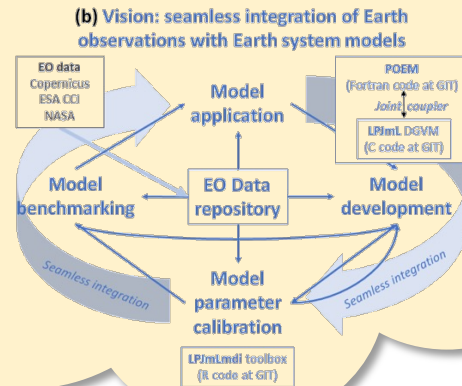


Main Outcome of Pilots

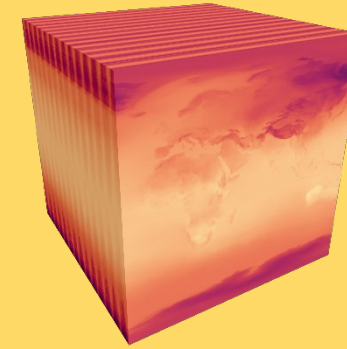


# Measure 1.1: Emerging Cluster

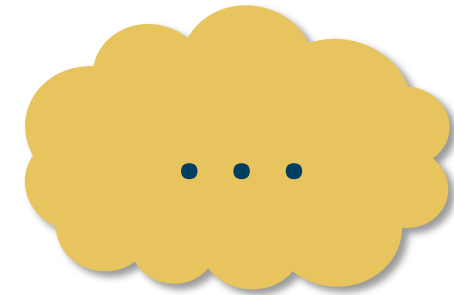
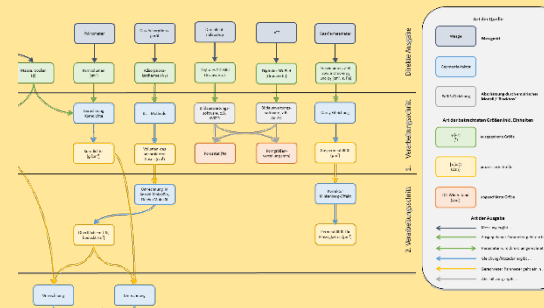
## Model Data Integration



## Data Cubes



## Metadata, Vocabularies, Ontologies



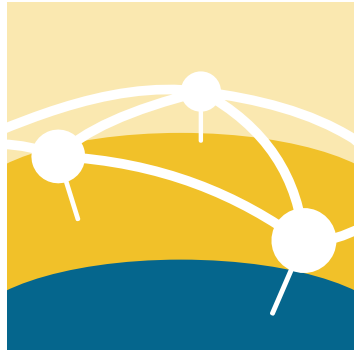
**Data Cube:** <https://www.lexcube.org/>,  
Maximilian Söchting, Universität Leipzig  
**Model Data Integration:** EO Data Integration,  
Naixin Fan & Matthias Forkel, TU Dresden  
**Metadata:** Data Map of Petrophysical Parameters and Methods,  
Sven Nordsiek, LIAG Hannover

# Next Call for Pilots Mid 2023!

## Stay Tuned!







# NFDI4Earth

## 2Participate

## Incubator Lab

Yu Feng (Coordinator)  
Monika Sester (Co-Applicant)

<https://www.ikg.uni-hannover.de/>



# Measure 1.2: Incubator lab

Identify and explore **new, potentially relevant building blocks** of NFDI4Earth – mainly related to tools and methods

- **Trend scouting of emerging technologies in the field**

- Surveys and discussions during NFDI-meetings; Pilot projects
- Desk studies / literature review
- Publication of living handbook

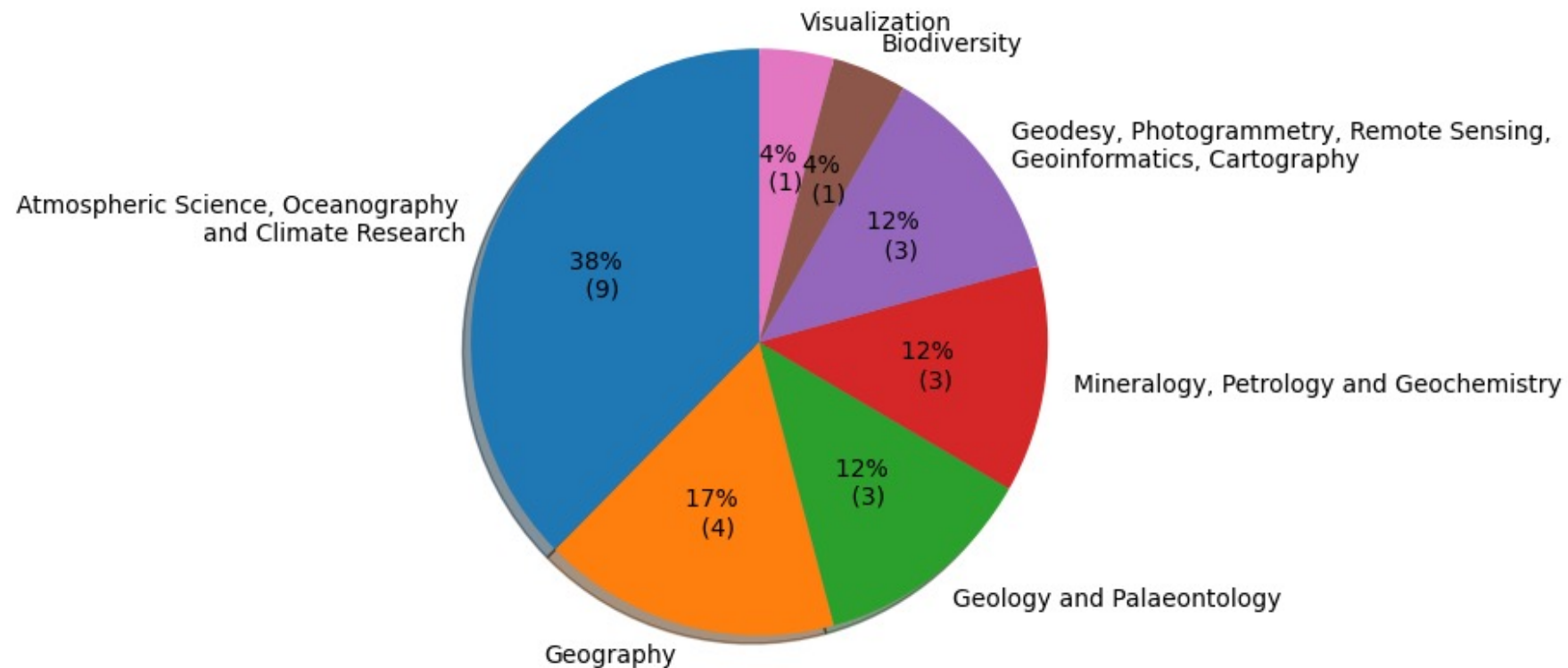
- **Incubator projects**

- Explore novel cutting-edge tools, latest innovations, and high-risk blue-sky ideas
- Potentially relevant building blocks to be included in NFDI4Earth
- 3-6 months short-term projects

# Measure 1.2: Incubator lab – first call

**May 2022:** 24 submissions received from both universities and research institutes

**July 2022:** Planned starts for incubator projects



# Measure 1.2: Incubator lab – first call

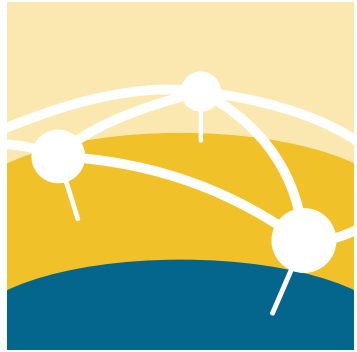
## Selected 5 projects:

- New framework for analysis of aquatic ecosystems (Ankita Ravi Vaswani, Hereon)
- Hierarchical Data Format for Water-related Big Geodata (HDF4Water) (Hao Li, Uni-Heidelberg, TUM)
- Data Mining Driven Microscopic Reference Data Acquisition (Artem Leichter, Uni-Hannover)
- Symbolic Background Knowledge for Machine Learning (Benjamin Risse, Uni-Münster)
- IPFS Pinning Service for Open Climate Research Data (Marco Kulüke, DKRZ with MPG)

**July 2022:** Planned start time for incubator projects

**New calls for Incubators also in  
the next years!**





# NFDI4Earth

## 2Participate

## Education and Training Materials and Services

Farzaneh Sadeghi & Fabian Przybylak (Coordinator)  
Carsten Keßler (Co-Applicant)  
Martin Werner, Edzer Pebesma & Remon Sadikni (Participants)

Hochschule Bochum  
Bochum University  
of Applied Sciences



## Measure 1.3: Education and Training Materials and Services

Enable NFDI4Earth stakeholders to conduct their work using an open and sustainable research data life cycle.

### Objectives

- Develop the **competencies for open and reproducible research** in ESS
- Enable ESS stakeholders to fully **leverage the NFDI4Earth ecosystem** in their respective (sub-) domains.

# Measure 1.3: Education and Training Materials and Services

## Actions

- Development of **curricula and course materials**
- Integration into NFDI4Earth **Single Point of Access**
- Implementing NFDI4Earth education and training in **EduHubs**



<https://www.nfdi4earth.de>

NFDI4Earth2Participate  
 M1.3: Education and Training Materials and Services  
 Contacts: Carsten Kießler and Farzaneh Sadeghi (Hochschule Bochum, [carsten.kessler@hs-bochum.de](mailto:carsten.kessler@hs-bochum.de) / [farzaneh.sadeghi@hs-bochum.de](mailto:farzaneh.sadeghi@hs-bochum.de))

**Who are we?**

- The education & training team **collects and develops** open, ready-to-use modular course material and curricula.
- We will **fund** Earth System Science (ESS) community to create educational content through annual **calls for educational pilots**.
- We will ensure the ease of access to these educational materials by making them available via a **single point of access**.
- We will regularly organize **education and training events** using these materials.
- We will establish an open **network of education and training hubs** for the long-term and sustainable development of ESS competencies.
- EduHubs **permanently** offer education and training services for ESS-related research data management and spatio-temporal data science.

**What is our goal?**

We want to enable widespread uptake of NFDI4Earth to conduct open and sustainable research by Earth System Science stakeholders.

**1st call NFDI4Earth Educational Pilot**

Submission Deadline: June 30, 2022

Educational Pilots' objective is to develop educational materials required by the Earth System Sciences (ESS) community. All materials will be available as Open Educational Resources (OERs). Submissions should focus on education and training materials and can relate to all aspects of the NFDI4Earth, in particular, **Research Data Management (RDM) in ESS**, **spatio-temporal data literacy**, and **spatio-temporal data science**; expected outputs should be, for example:

- Slides, exercises, labs, quizzes, etc. for use in individual class units or to cover (sections of) a course
- Tutorials, interactive course materials, notebooks, etc.
- Video recordings with closed captions (optionally with Q&A elements)

The funding of the projects will be according to the DFG personnel rate and could be used, e.g., professional media production or assistant scientists. The educational materials and a short report (max. four pages) documenting the developed materials should be submitted by the **end of November 2022**.

**Application and evaluation process:**

- Any researcher can apply who is affiliated or hosted by a German research institution. In the latter case, a letter of confirmation from the host is required, along with the proposal submission.
- Educational Pilots must be concisely described; the proposal must not exceed two pages. Submissions should follow the template:
- By submitting a proposal, you as PI agree to an open-access proposal evaluation.
- Criteria for the evaluation of the pilots will be in equal parts (scored on a 5 points scale for each criterion):
  - Quality (e.g., attractive presentation)
  - State of the art content
  - Novelty (addressing the gaps in existing OERs in ESS)
  - Use of active teaching methods
  - Relevance to RDM in ESS
  - Potential for integration into NFDI4Earth curricula

**Note: If the submitted pilot proposal is successful, the applicant and host (if applicable) agree that:**

- The PIs parent institution will be named as Participant (with the PI as representative) of the NFDI4Earth.
- A letter of commitment (LoC) will be provided if the institution of the PI is not yet a Participant in NFDI4Earth (due to DFG regulations, the letter must be signed by your institution).
- The so-called 'funds transfer and cooperation agreement' must be signed as a Participant (Institution) for funding.
- The produced materials will be made available as Open Educational Resources under a permissive license (Creative Commons or similar).

**Also note: The submission is subject to a review process and does not guarantee any funding!**



**Invitation to collaboration**

Are you an educator? A lecturer? Or a professor?  
 Do you care about your planet and its future?



We invite you to share your knowledge with earth system researchers worldwide to:

- boost the impact of your work**
- support your community**

Does that sound interesting?

Our team would like to include your educational material in the Training and Education section of NFDI4Earth.

We are looking for educational material about:

- Research Data Management tailored for Earth System Sciences**
- Spatio-temporal data literacy**
- Spatio-temporal data science**

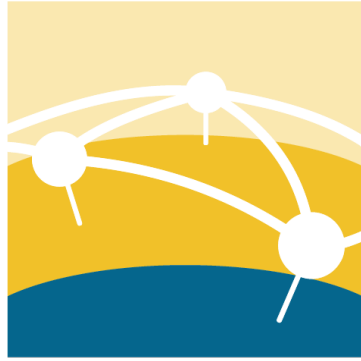
There is more:

**We will credit you for the provided material!**

If you have educational materials that could help earth system scientists send them to [farzaneh.sadeghi@hs-bochum.de](mailto:farzaneh.sadeghi@hs-bochum.de), these could be anything from slides, quizzes, and exercises to an entire module or course.



# Call for Edu Pilots coming soon!



**NFDI4Earth**  
Academy

## The Training Network to bridge Earth System and Data Sciences

Effi-Laura Drews & Jonas Kuppler (Coordinators)

Hildegard Gödde (Co-Applicant)

Konstantin Ntageretzis & Gauvain Wiemer (Participants)

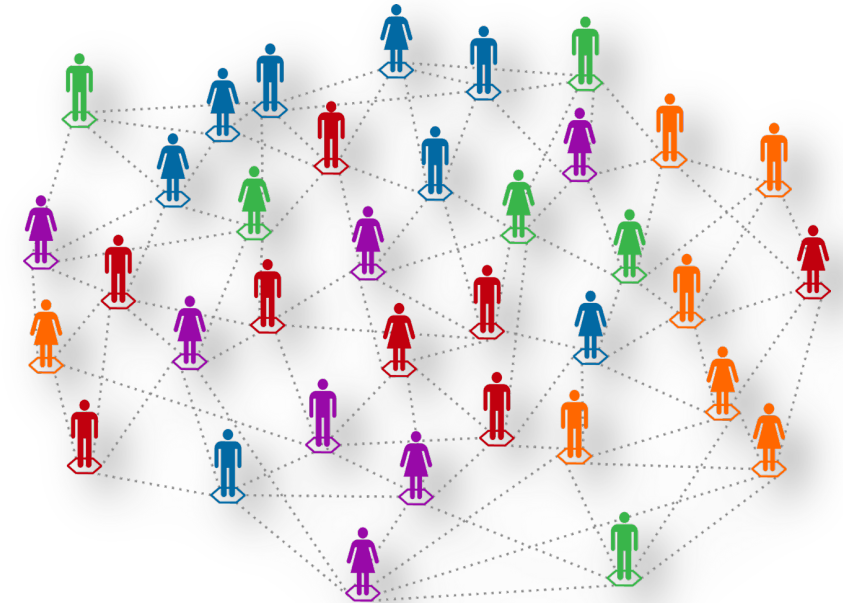
Geo.X

**DAM** DEUTSCHE  
ALLIANZ  
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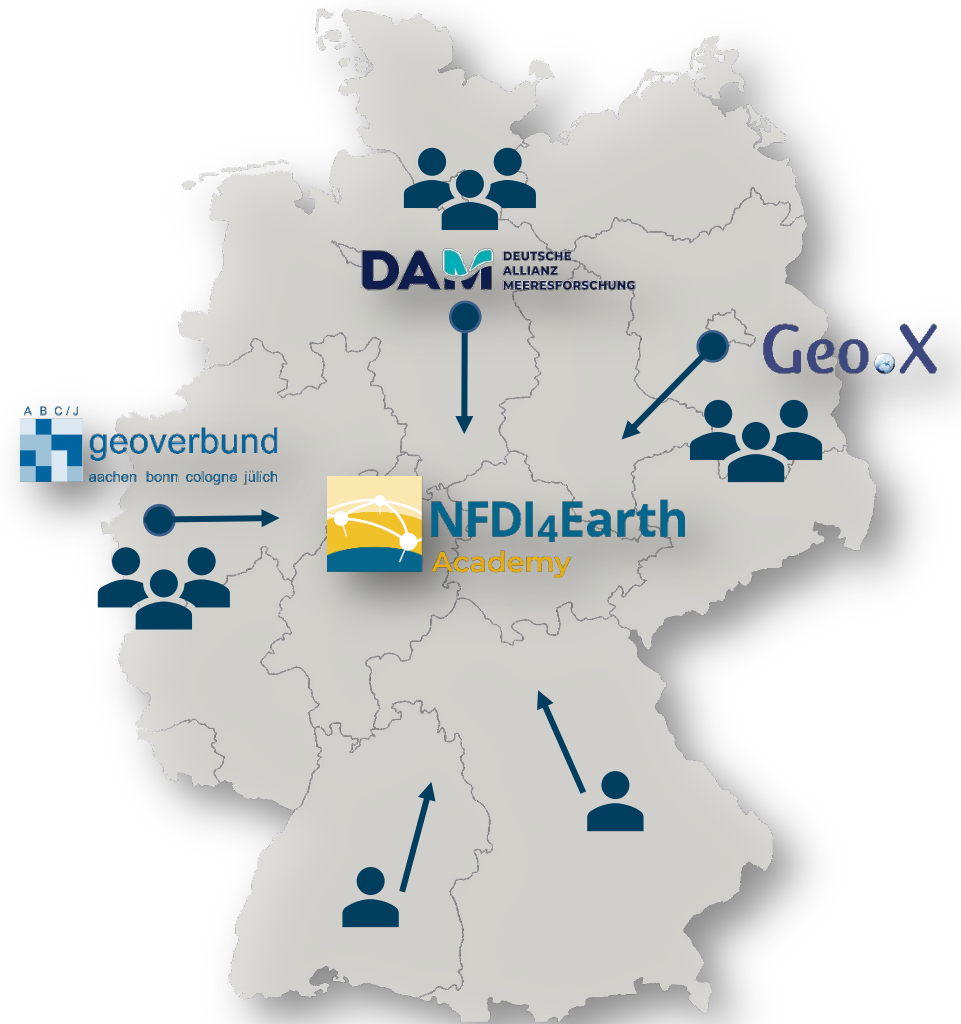
# Goals

- **Think Tank** for connecting Earth System Sciences (ESS) with Data Sciences
- **Networking, training, and collaborative research** of ESS young scientists (Academy **Fellows**) in **Data Sciences**
- **Proof of concepts** for the NFDI<sub>4</sub>Earth *via* Academy Fellows' projects



# Concept

- **Connectivity** to all NFDI<sub>4</sub>Earth developments, especially incubators, pilots, and EduHub
- **Peer-mentored environment** for Academy Fellows
- **NFDI<sub>4</sub>Earth Academy's backbone** formed by a cross-site cohort of fellows from the research networks Geo.X, DAM, and Geoverbund ABC/J
- **Open academy program** for the NFDI<sub>4</sub>Earth community based on agile fellows' bottom-up processes

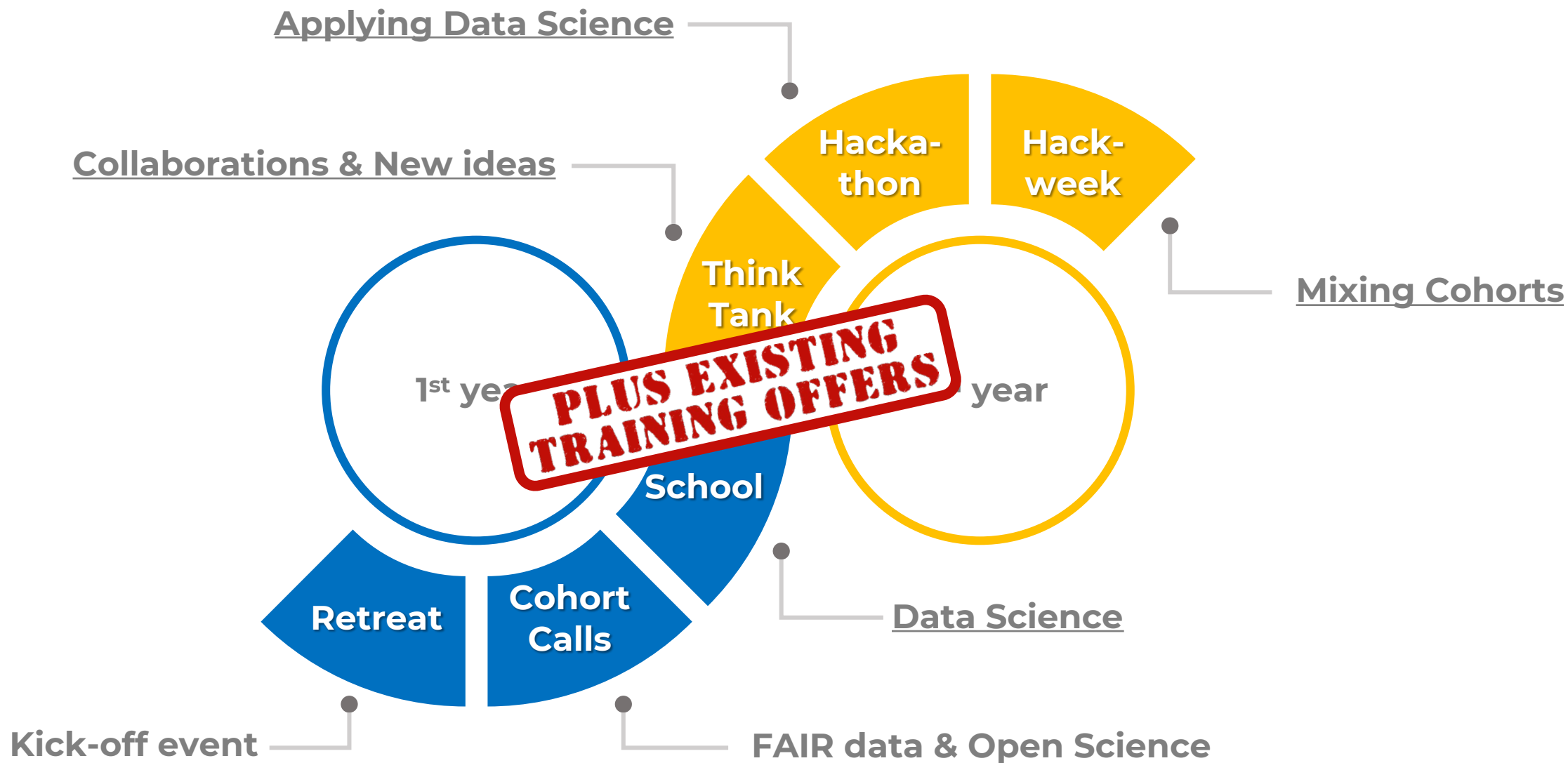


# Program

- **Pillars of the program:**
  - Principles of RDM and data workflows following NFDI4Earth standards
  - Advanced data analysis
  - NFDI<sub>4</sub>Earth events
- **Hands-on and peer-exchange formats**
  - (virtual) lecture series, workshops on fellow-selected topics, fall school, and hackathons



# Program



# Upcoming call 2022

- **End June: Call for Fellow Application opens**
  - PhD students and Postdocs are eligible to apply
  - Fast application process with short project description & motivation letter
- **End September: Call closes**
  - Three month application period
- **Mid/End October: Decisions are announced**
  - Selection process by Earth System and Data Scientists
- **Begin November: 1<sup>st</sup> Cohort starts**
  - Kick-off Meeting (Mid or End November 2022)





***Thank You !***



<https://www.nfdi4earth.de/>