



The GIP-theme and project

GeoERA Final Conference, 19 January 2022

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Geological Survey of Denmark and Greenland



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731166



Outline

1. Background for the theme and the GIP-Project
2. Overall objectives
3. Approach
4. Main results



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1. Background

- Discontinued projects
 - 400 - 700 M€ spent on geoscientific data harmonisation projects. Very many of those are not on-line any more.
- Cross thematic analyses central to GeoERA
- Obvious a very large overlap in what the projects needed
- EGDI already before GeoERA contained a lot of the needed functionality
- **Conclusion: A specific theme and project needed**



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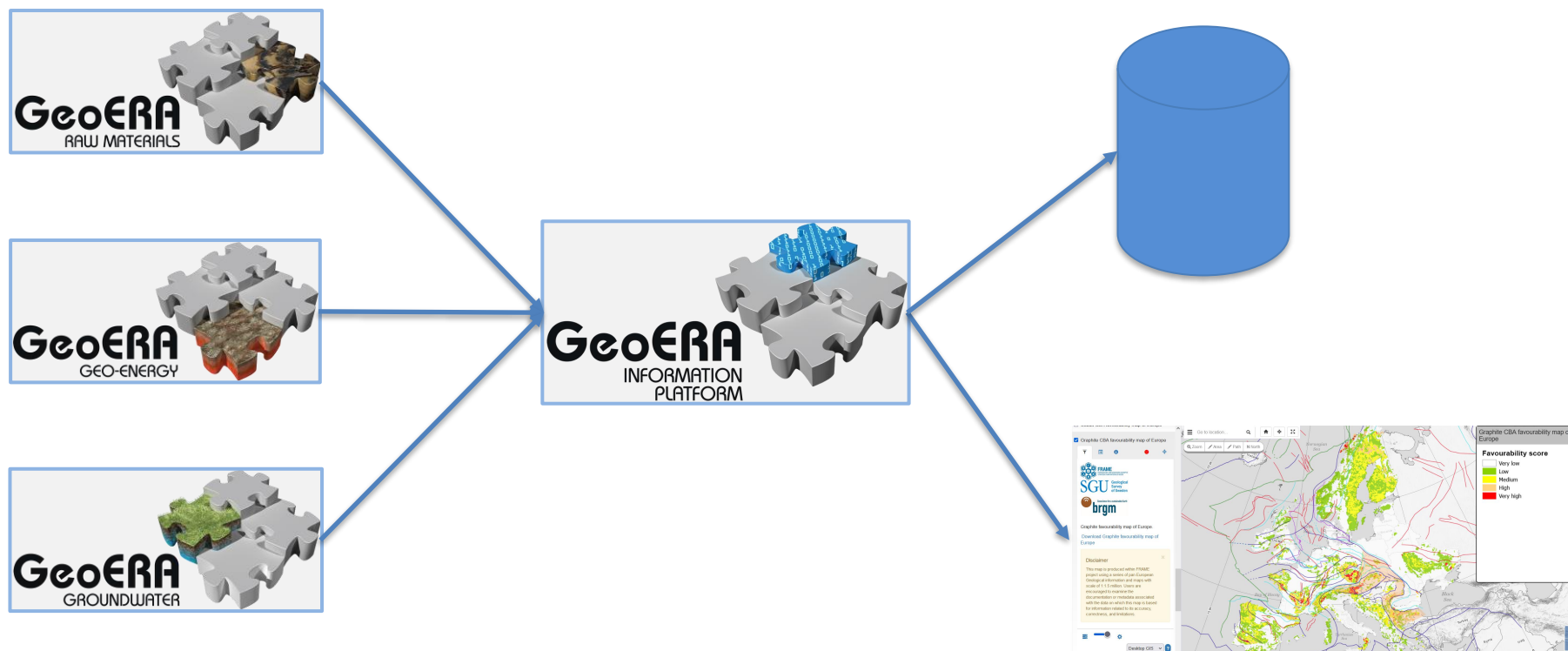
2. Overall objectives of GIP-P

- Support the 14 GSPs organizing, standardizing, disseminating and safeguarding their results



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2. Overall objectives of GIP-P

- Support the 14 GSPs organizing, standardizing, disseminating and safeguarding their results
- Support cross project and cross domain analyses
- FAIRness is important
- High quality and cost-effectiveness



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To be continued under the GLP-project
presentation at 11:10...



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3. Approach

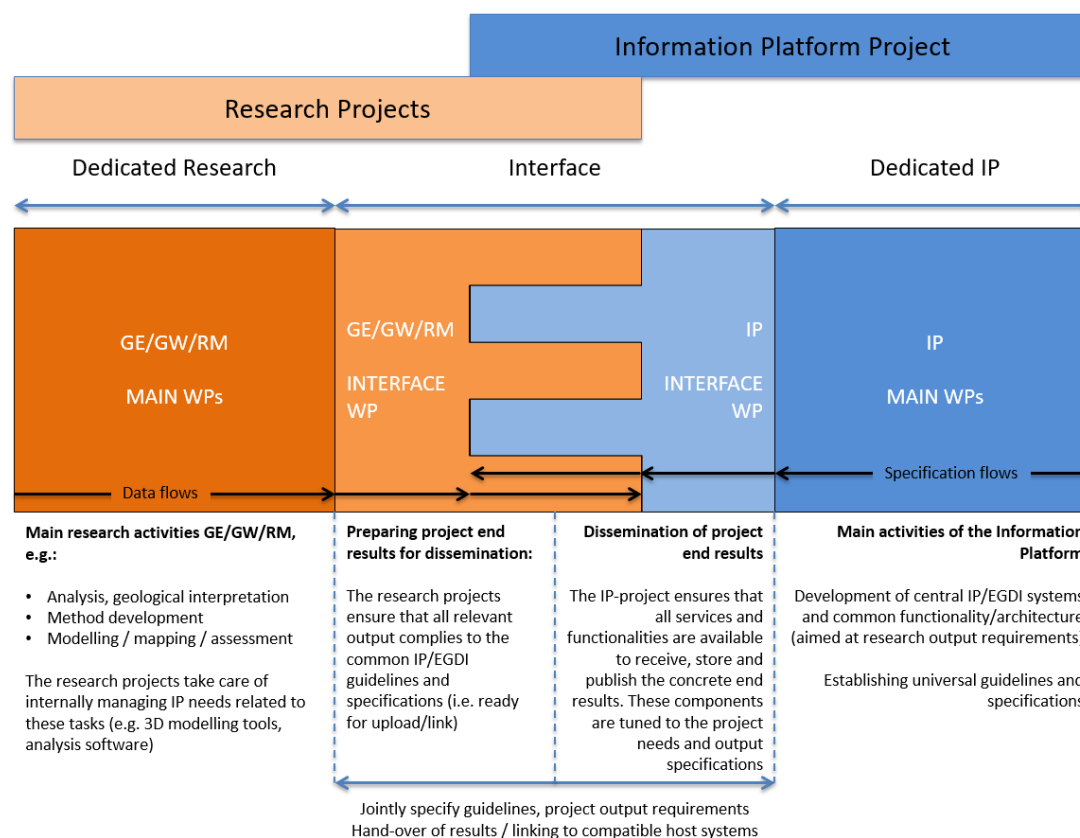
3.1 Specific organisation to liaise with GSPs



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3.1 Liaison GLP-project and GSPs



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3. Approach

3.1 Specific organisation to liaise with GSPs

3.2 Focus on FAIR principles



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3.2 Focus on FAIR principles

- Purpose: Make the results of GeoERA as valuable and useful as possible for “everyone”
- Use the FAIR principles and guidelines to achieve that
- Very strong focus on metadata
- Help the projects standardise and harmonise their data
- Ensure we live up to technical standards



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3. Approach

3.1 Specific organisation to liaise with GSPs

3.2 Focus on FAIR principles

3.3 Build on EGDI + extensions



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3.3 Building on EGDI (and extending)

- Choosing EGDI as the information platform gave the projects a jump start
- After a few months almost all projects had their first maps on-line
- EGDI is easy to extend with new functionality in cooperation with the GSPs



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3. Approach

3.1 Specific organisation to liaise with GSPs

3.2 Focus on FAIR principles

3.3 Build on EGDI + extensions

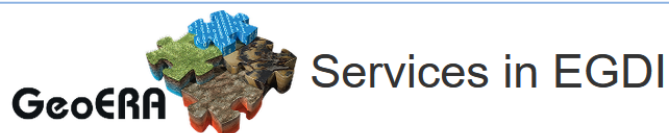
3.4 Central storage of files



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3.4 Central storage of results. Why?



Service	Metadata	Status	Open in map
- GARAH			
- Petroleum Systems in the North Sea			
Hydrocarbon fields	😊	😊	<input type="checkbox"/>
- Unconventional gas plays			
Bo member	😊	😊	<input type="checkbox"/>
100 m Kimmeridge Clay and equivalents	😊	😊	<input type="checkbox"/>
Kimmeridge Clay and equivalents	😊	😊	<input type="checkbox"/>
Posidonia and equivalents	😊	😊	<input type="checkbox"/>
Sleen Formation	😊	😊	<input type="checkbox"/>
Bowland and equivalents	😊	😊	<input type="checkbox"/>
- Unconventional oil plays			
Bo Member and equivalents	😊	😊	<input type="checkbox"/>
100 m Kimmeridge Clay and equivalents	😊	😊	<input type="checkbox"/>
Kimmeridge Clay and equivalents	😊	😊	<input type="checkbox"/>
Posidonia and equivalents	😊	😊	<input type="checkbox"/>
Sleen Formation	😊	😊	<input type="checkbox"/>
- Conventional Plays			
Shallow Gas	😊	😊	<input type="checkbox"/>
Eocene	😊	😊	<input type="checkbox"/>
Lower Eocene	😊	😊	<input type="checkbox"/>
Paleocene	😊	😊	<input type="checkbox"/>
Upper Cretaceous	😊	😊	<input type="checkbox"/>
Lower Cretaceous	😊	😊	<input type="checkbox"/>
Upper Jurassic	😊	😊	<input type="checkbox"/>
Middle Jurassic	😊	😊	<input type="checkbox"/>



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4. Main results

4.1 New developments:

- Document repository

- General free text search system

- Project Vocabularies and Keyword Thesaurus

- 3D database and viewer

- Administration module

4.2 559 layers and 1299 documents uploaded

4.3 Thematic viewers plus overall GeoERA map

4.4 Extensive user support and material

4.5 Integrated, extensive and searchable metadata

4.6 Increased FAIRness

4.7 Agreement and documentation of license models




4.8 Single point of access to all results



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Document repository



Welcome to EGDI Repository Search platform

(production version 1.7.0) - Documents in the repository: 1340.

✕ Close

☐ Basic search
 ☒ Semantic search
 ☐ Advanced search

☐ Use Spatial search

? Help

Basic search

Basic search is searching for all of the selected or typed keywords. Example:

- Start typing, choose one keyword from the list of the autosuggested keywords. Start typing again (e.g. "water" - without quotes), press Enter, then press Basic Search.

Semantic Search


Semantic search is searching for all of the selected or typed keywords including all semantically related keywords in selected languages. Languages for semantic search can be selected from the languages menu. Examples:


- Type "water", leave the pre-chosen language option and press Semantic Search
- Start typing, 1st choose autosuggested keyword from the list, type the 2nd searched word, press Enter, choose additional languages from Languages option in the right side bar menu to get semantically related words in that language and press Semantic Search

Advanced Search

All keywords and search conditions must be entered manually. No autoselection list and semantic is given. Examples:

- Type * (without quotes), press Enter.
- Type CO2 OR "Traditionelt permeable" and press Enter.
- Type CO2 AND "Traditionelt permeable" and press Enter.
- Type (CO2 NOT "Traditionelt permeable") OR Moden and press Enter.

 Settings

 Languages

water

abandoned, insufficient water
abandoned, poor water quality
Area mapping of superficial geothermic resources by soil and groundwater data
artesian water
brackish water
brine water
coastal water
condition of groundwater
contingency water supply
cooling water



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GeoERA Search System

Language: English (en) ▼

Main catalogue that allows you to discover, display and query resources in the Search System

List of results

Show only the resources for which it has been searched in its data.

[Why these results?](#)☐ Off**1909 results**

> Uncertainty in recharge values at selected boreholes across Europe

**52 records**[FULL METADATA](#)[HTML ▼](#)

A dataset showing the locations of the boreholes where LTA recharge values are calculated together with percen...

> Monthly projected recharge values at selected boreholes across Europe

**52 records**[FULL METADATA](#)[HTML ▼](#)

A dataset showing the locations of the boreholes where monthly projected recharge values are calculated. Clicki...

> Time series of recharge values at selected boreholes across Europe

**52 records**[FULL METADATA](#)[HTML ▼](#)

A dataset showing the locations of the boreholes where time series of recharge values (mm/year) are calculated ...

> LTA recharge values at selected boreholes across Europe

**52 records**

Use spatial intersection in the search

☒ On

Topic categories

Select: [All](#) | [None](#)

- ☒ Energy
- ☒ Geohazards
- ☒ Geology
- ☒ Groundwater
- ☒ Mineral resources
- ☒ Onshore geology
- ☒ Soil



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Project Vocabulary

Vienna Basin Fault System


URI <https://data.geoscience.earth/ncl/geoera/hike/faults/506>

Wiener-Becken-Störungssystem  Vienna Basin Fault System 

Notation: AT-154



The almost 200 km long, NNE-SSW trending, rhombohedral Vienna Basin consists of mostly NE-SW striking oblique left-lateral strike-slip faults at its eastern margin and NNE-SSW trending listric normal faults compensating E-W extension (Decker, 1996). It extends from Gloggnitz at its southern end via the recent flood plain of the River Danube between Vienna and Hainburg at its widest point towards Zilina in the North. Formation of the Vienna Basin Fault System started due to pull-apart subsidence during the Badenian at around 16 Ma and lasted until 9 - 8 Ma (Decker, 1996; Peresson & Decker, 1997; Hölzel et al., 2010). Quaternary reactivation is indicated by dissected Pleistocene terraces and Quaternary basins (Decker et al., 2005, Beidinger & Decker, 2011).





— Beidinger, A. & Decker, K. (2011): 3D geometry and kinematics of the Lassee flower structure: Implications for segmentation and seismotectonics of the Vienna Basin strike-slip fault, Austria. - *Tectonophysics* 499, 1-4, 22-40
 — Decker, K. (1996): Miocene tectonics at the Alpine Carpathian junction and the evolution of the Vienna basin. - *Mitteilungen der Gesellschaft der Geologie- und Bergbaustudenten in Österreich* 51, 33-44 
 — Decker, K.; Peresson, H. & Hinsch, R. (2005): Active tectonics and Quaternary basin formation along the Vienna Basin Transform fault. In: *Quaternary Science Reviews* 24, Nr. 3-4, S. 307-322.
 — Hölzel, M., Decker, K., Zámolyi, A., Strauss, P. & Wagreich, M. (2010): Lower Miocene structural evolution of the central Vienna Basin (Austria). - *Marine and Petroleum Geology* 27, 3, 666-681
 — Peresson, H. & Decker, K., (1997): Far-field effects of Late Miocene subduction in the Eastern Carpathians: E-W compression and inversion of structures in the Alpine-Carpathian-Pannonian region. - *Tectonics* 16, 1, 38-56.

Concept relations

broadier

[Mur-Mürz-Vienna Basin-Vah Large-scale Fault System](#) 

narrower

[Aderklaa-Bockfless Subfault System](#) 
[Bisamberg Fault](#)
[Engelhartstetten Fault](#)
[Lassee Subfault System](#) 
[Leopoldsdorf Fault](#)
[Markgrafenriedl Fault](#)
[Matzen Subfault System](#)
[Mitterndorf Subfault System](#) 
[Nussdorf Fault](#)
[Pirawarth-Hochleiten Subfault System](#) 
[Poysbrunn Fault](#)
[Schrattenberg Fault](#)
[Steinberg Fault](#)

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Search for...

Go!

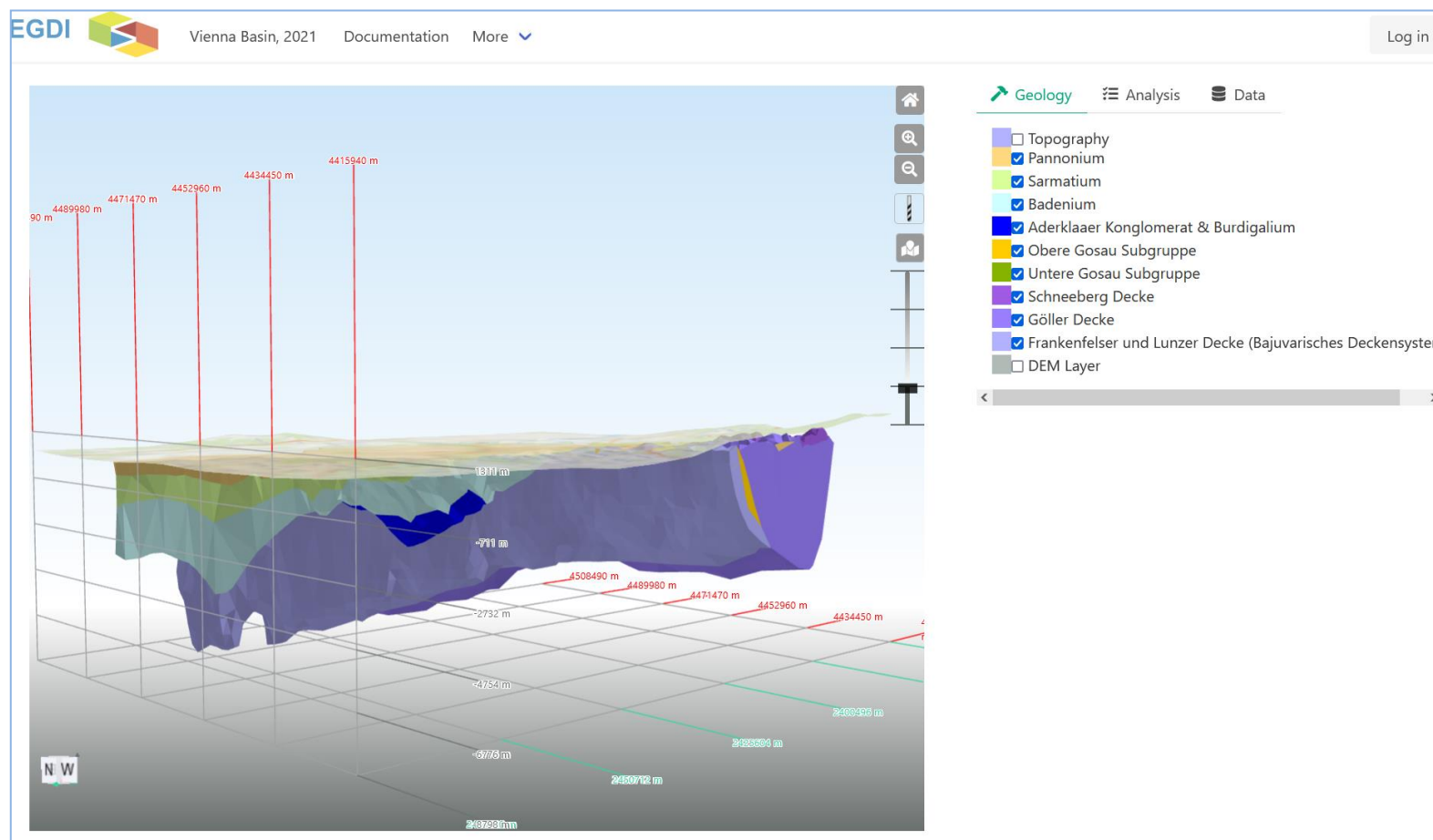
HIKE - Hazard and Impact Knowledge for Europe

The HIKE project aims to support research and assessments of induced hazards and impacts that are related to the exploitation of subsurface resources and capacities throughout Europe. This will be achieved through development, demonstration and implementation of harmonized subsurface data sets and methodologies, investigation of applied use cases, and facilitation of knowledge shared between geological surveys and stakeholders. WP-2 focuses on the development of a European fault databa..
<https://geoera.eu/projects/hike10/>
 Download: [RDF](#), [TTL](#)




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3D model database and viewer



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Administration module

EGDI Admin

Data set


Web map

Couplings

Upload GeoPackage / GeoTIFF file (step 1 of 2)

In this page you can upload the datasets included inside a GeoPackage or GeoTIFF file (read the [user manual](#) for more information). Make sure that you have created metadata for the dataset in the [EGDI Metadata Catalogue](#) first. You can read about how to organise your data in [GeoPackages here](#) or [GeoTIFFs here](#).



Metadata url*

 Example

GeoPackage / GeoTIFF file*

Drag your file here

or click to select manually

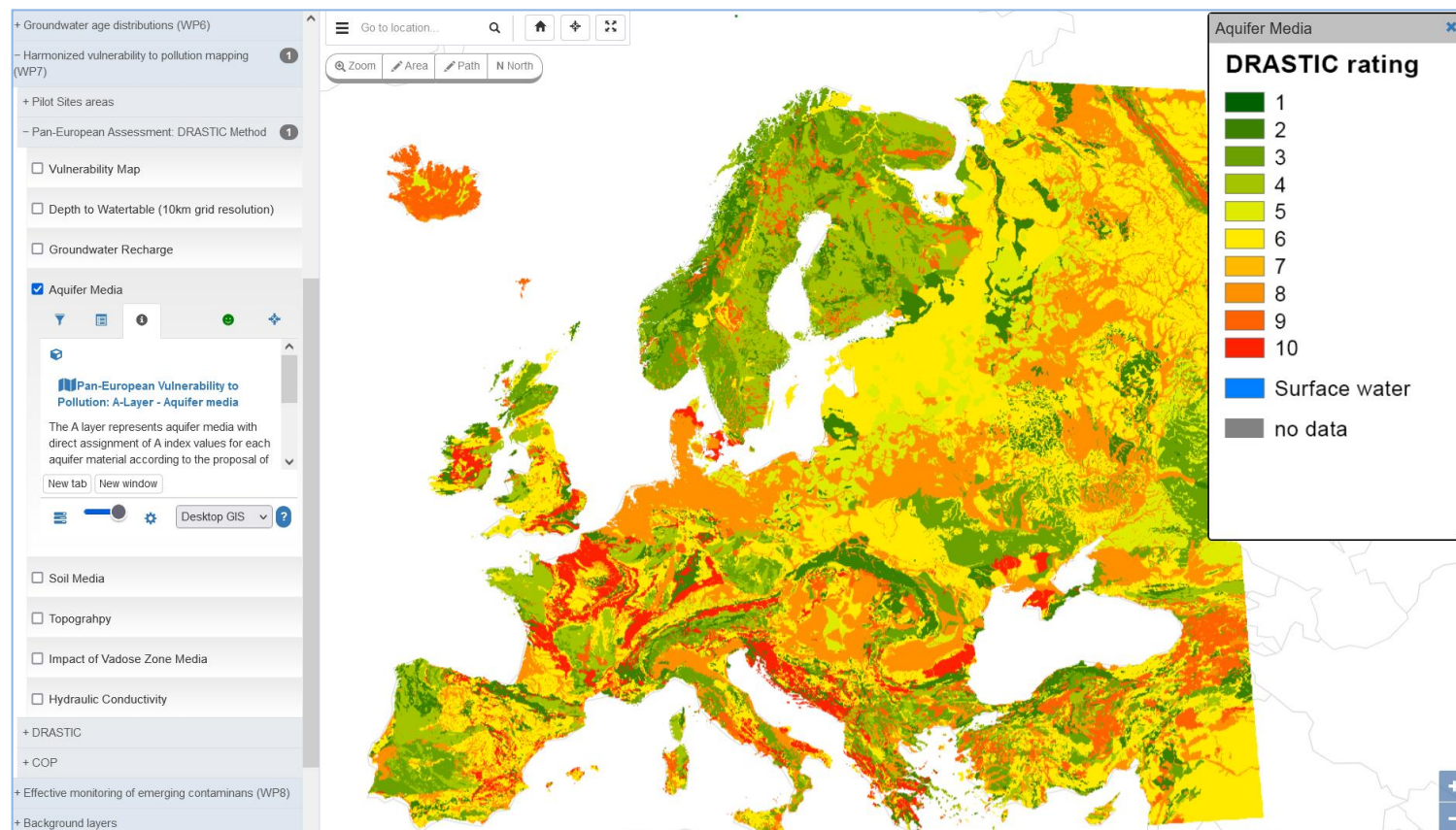
TIFF

Upload




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Project specific viewer



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Integrated metadata




← Basic metadata / Full Metadata
🔍 📄

Pan-European Vulnerability to Pollution: A-Layer - Aquifer media

Abstract

The A layer represents aquifer media with direct assignment of A index values for each aquifer material according to the proposal of the HOVER project. The aquifer media scoring was applied to IHME1500 lithology level 2 information.

Type	dataset
Resource Locator	EGDI platform
Identifier	https://www.europe-geology.eu/HOVER/gewp7_peu3_a
Language	English
Topic category	Geoscientific information
Keywords	<p><i>GEMET - INSPIRE themes, version 1.0:</i></p> <p> European European Geoscience Registry - Projects: HOVER</p> <p><i>Free:</i> Aquifer media, IHME1500, Europe, DRASTIC, EGDI</p>
Bounding box	-24.591, 30.355, 71.467, 71.201
Date	creation: 2020-05-23
Spatial Representation	grid
Contact Info	Federal Institute for Geosciences and Natural Resources (BGR) Stillweg 2, Hanover, 30655, Germany email: Andreas.Guenther@bgr.de Role: originator

Data Quality

Lineage

Raster processing of IHME1500 vector data was done with SAGA GIS 7.7.1 software. The aquifer media scores 1 - 10 are provided as 4 byte floating point numbers in .tif format

Spatial Resolution

Conformity [INSPIRE - Interoperability 1089/2010](#)


Constraints

Access and use conditions [Copyright \(All Rights Reserved\)](#)


Limitations on public access [no limitations to public access](#)

Metadata about metadata

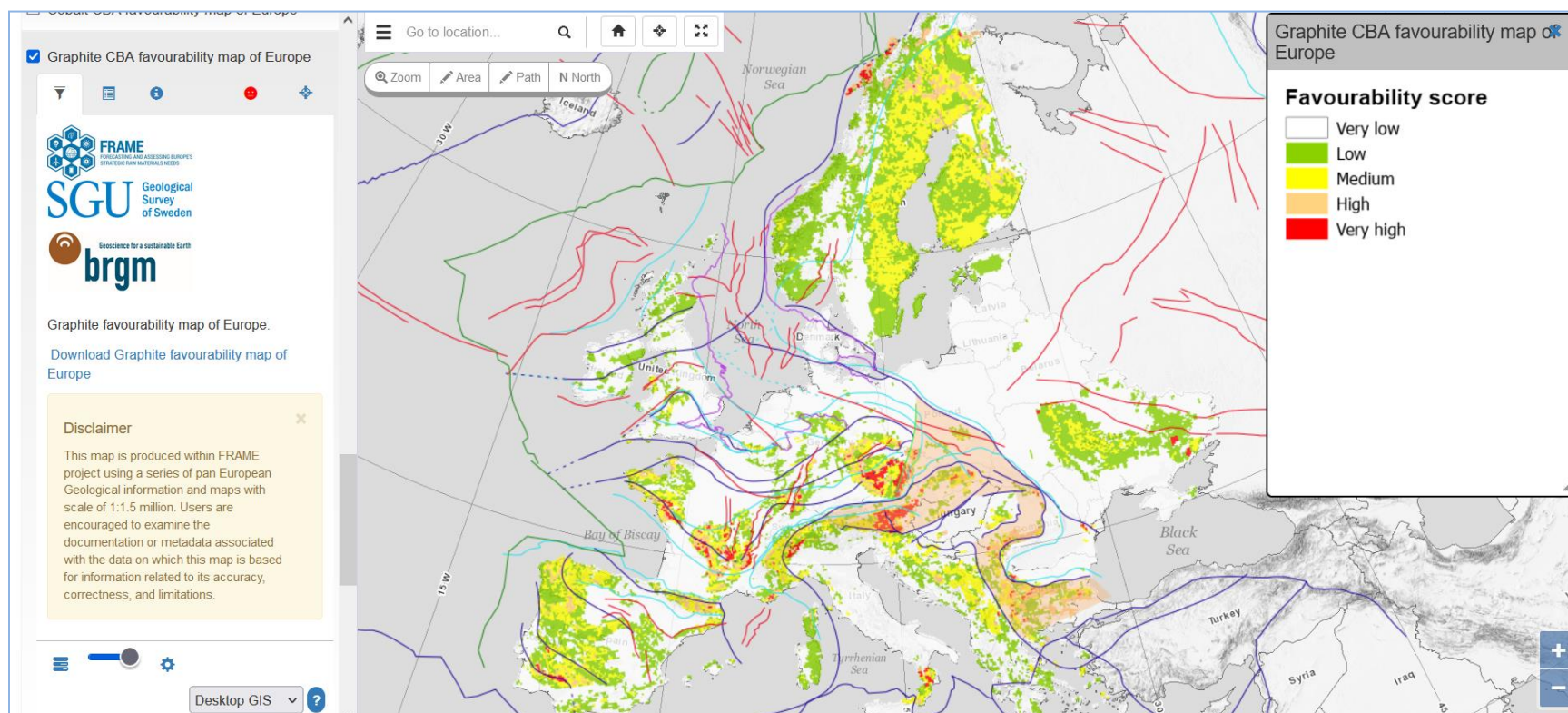
Metadata identifier	610d0cca-7328-48ab-8c75-29b30a010833
Metadata Contact	Federal Institute for Geosciences and Natural Resources (BGR) Stillweg 2, Hanover, 30655, Germany email: Andreas.Guenther@bgr.de Role: point of contact



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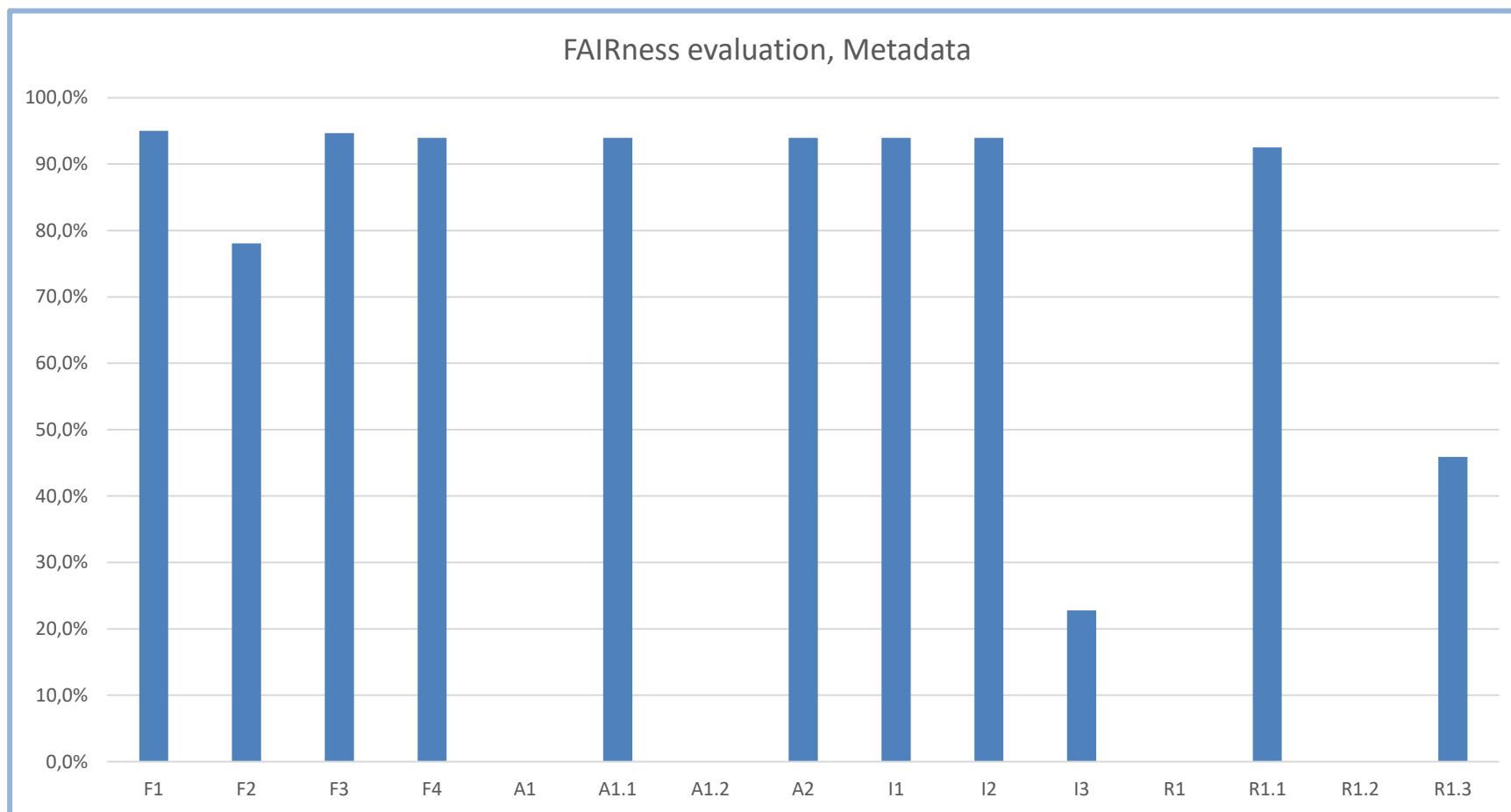


Combining all GeoERA results on one map



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4.6 FAIRness evaluation, Metadata



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Support hub

GeoERA GIP

About Support Docs Posts Categories Tags

GeoERA Data provider support

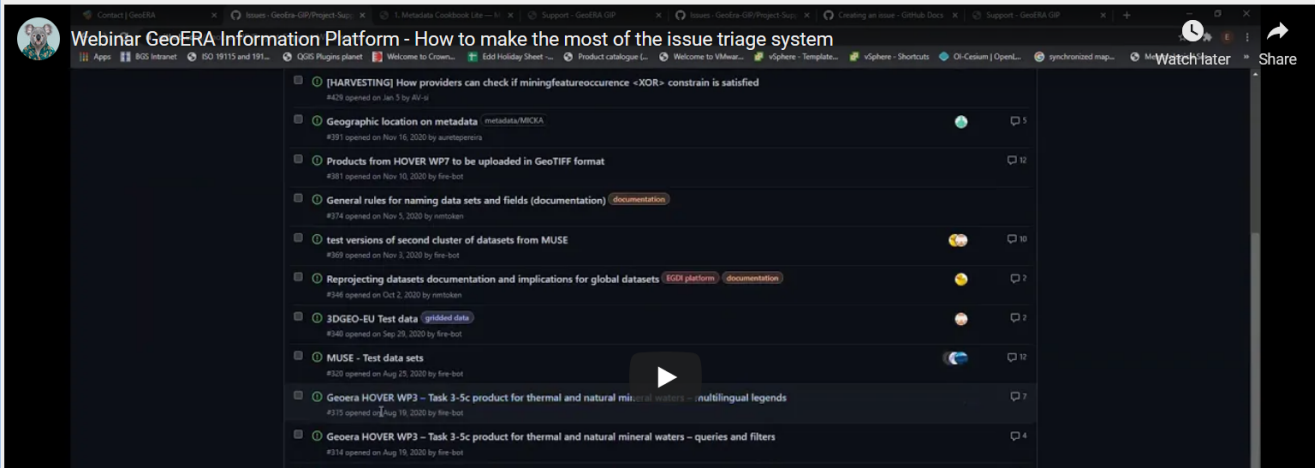
Provided by: UKRI, GEUS, TNO, GeoZS, CGS, BRGM, NERC, ISPRA, NGU, RBINS & HGI-CGS

Presentations

Overview Presentation 19-05-2020: [WP8 Presentation](#)


Summary presentation on project vocabularies - [GeoEra Project Vocabulary Summary](#)

Webinar on using the GitHub Issue tracker (25/02/2021)



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e-Learning Platform






GeoERA GIP e-Learning Platform

GeoERA GIP e-Learning Platform

This is the e-learning platform of the GeoERA GIP project, created to support GPSs projects and exchange examples of standardization. It is part of the WP8 support resources available at [GeoERA GIP Support page](#)

Available courses

 <p>HIKE Data Harmonisation - data model overview and b...</p> Course >	 <p>Introduction on use software for Data harmonisation (...)</p> Course >	 <p>Hover Data Harmonisation - data model overview and ...</p> Course >
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Course categories

▼ Standardization training path

- Data harmonisation module (3)
- Semantic harmonisation module
- Metadata production module

▸ Generic ICT training path

▼ Collapse all



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Single point of access to all results.

On GeoERA website




Main results of the project


[Map of all results](#)




[Metadata](#)




[Advanced Search System](#)




[Document repository](#)



[Project Vocabularies](#)




[Keyword Thesaurus](#)




Communication


[Media gallery](#)



[Video](#)




[Blogs and social media](#)




Support


[For data providers](#)



[eLearning Platform](#)




[Service status](#)



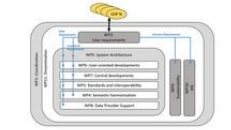
Service	Metadata status	Search status
GeoERA	OK	OK
Advanced Search System	OK	OK
Document Repository	OK	OK
Project Vocabularies	OK	OK
Keyword Thesaurus	OK	OK
Media gallery	OK	OK
Blogs and social media	OK	OK
eLearning Platform	OK	OK
For data providers	OK	OK
Service status	OK	OK

About the project


[Budget and Participants](#)



[Work packages](#)



[Deliverables](#)




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Thank you for your attention

Jørgen Tulstrup (jtu@geus.dk)



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