



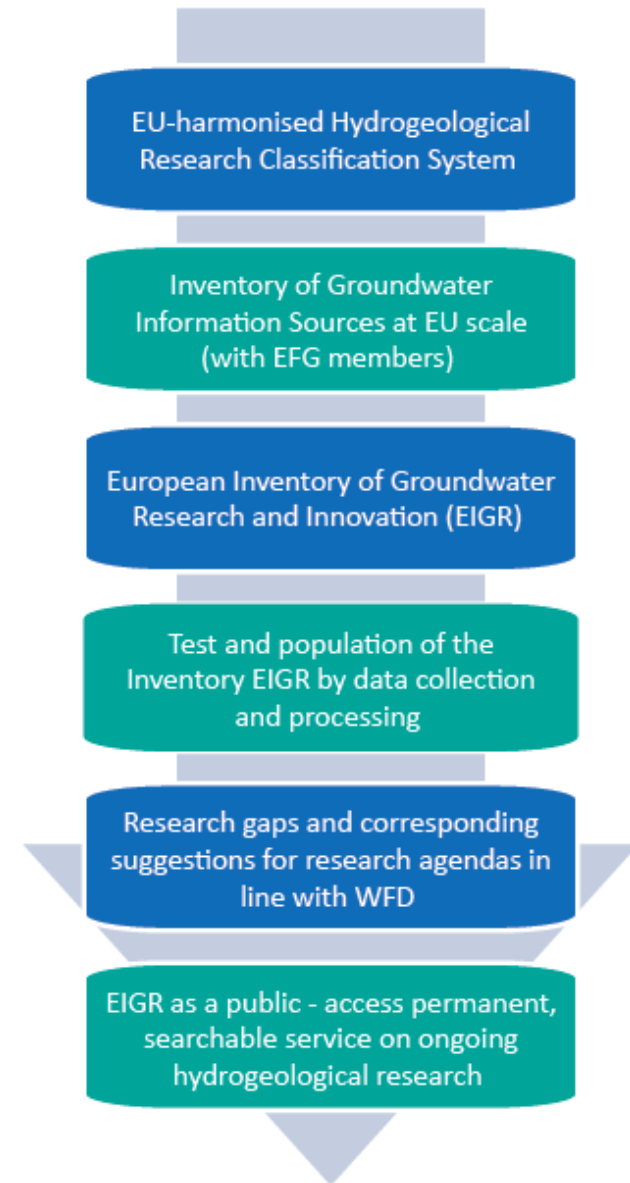
## H2020 Project:

# Knowledge Inventory for Hydrogeology Research

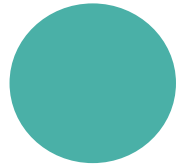
**“A project on groundwater research inventory and classification to make groundwater visible ”**

## Aims of the project (2015-2017)

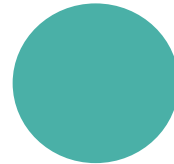
To create an inventory of GW knowledge and use the inventory to identify critical research challenges in line with the implementation of the WFD and new innovation areas within integrated water resources management based on the latest research.



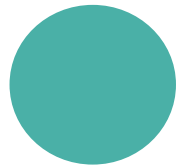
## Added values of KINDRA EIGR:



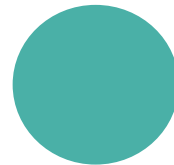
An inventory **exclusively dedicated to groundwater**, unlike other databases



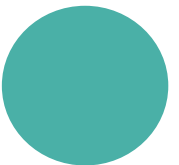
Combining research and knowledge enables and ensures **access and relevance for academics, practitioners and policy makers**



A **classification system dedicated to** research, papers, projects, reports, databases, etc.



It is developed **BY and FOR hydrogeologists and other "groundwater people"**, to **promote networking** and enlarge our community



Harmonized international access to information on national and European research and knowledge **before it is finally published**



Database analysis will be used for **EU policy support** and to **increase the visibility and awareness of the importance of groundwater research in the societal challenges**

# How to classify groundwater research?

Keywords



Research topics

Societal challenges

EU policies

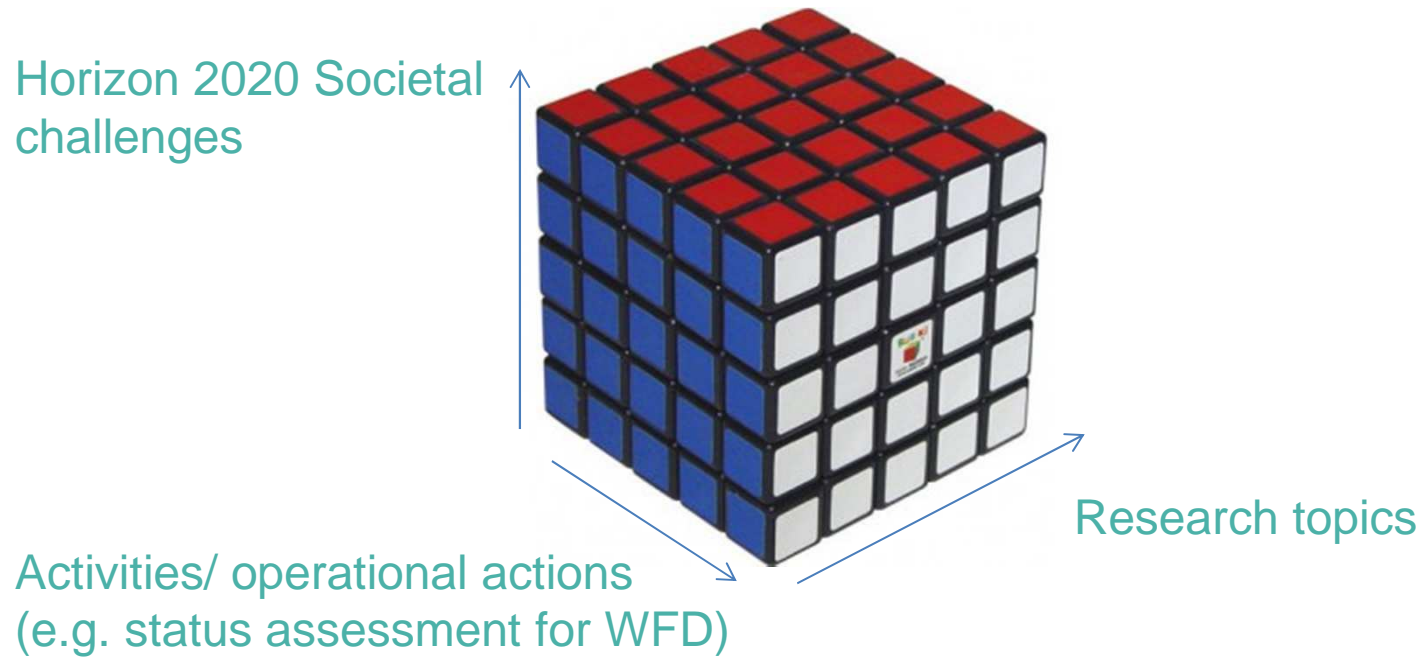
Operational  
Actions

Other ????

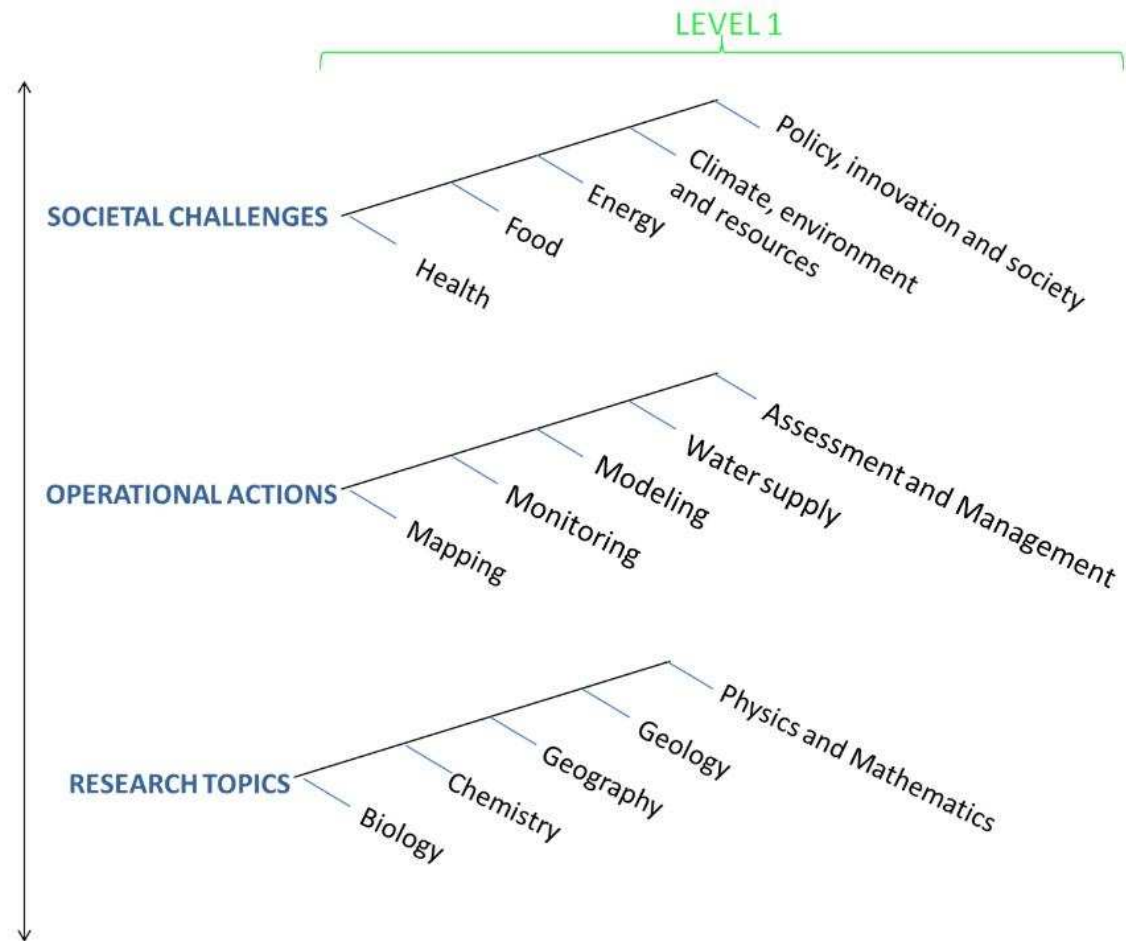
## More than 200 main keywords were selected from:

1. 20 key groundwater science journals
2. Scopus / Web of Science / Google Scholar
3. EU policy documents (Water Framework and Groundwater directives, Blueprint to Safeguard Europe's Water Resources)

# How to classify groundwater research (in Europe)?



# Definition of main categories for groundwater research classification



## 3D conceptual illustration of the Groundwater Research main categories classification and scientific output

### Societal Challenges

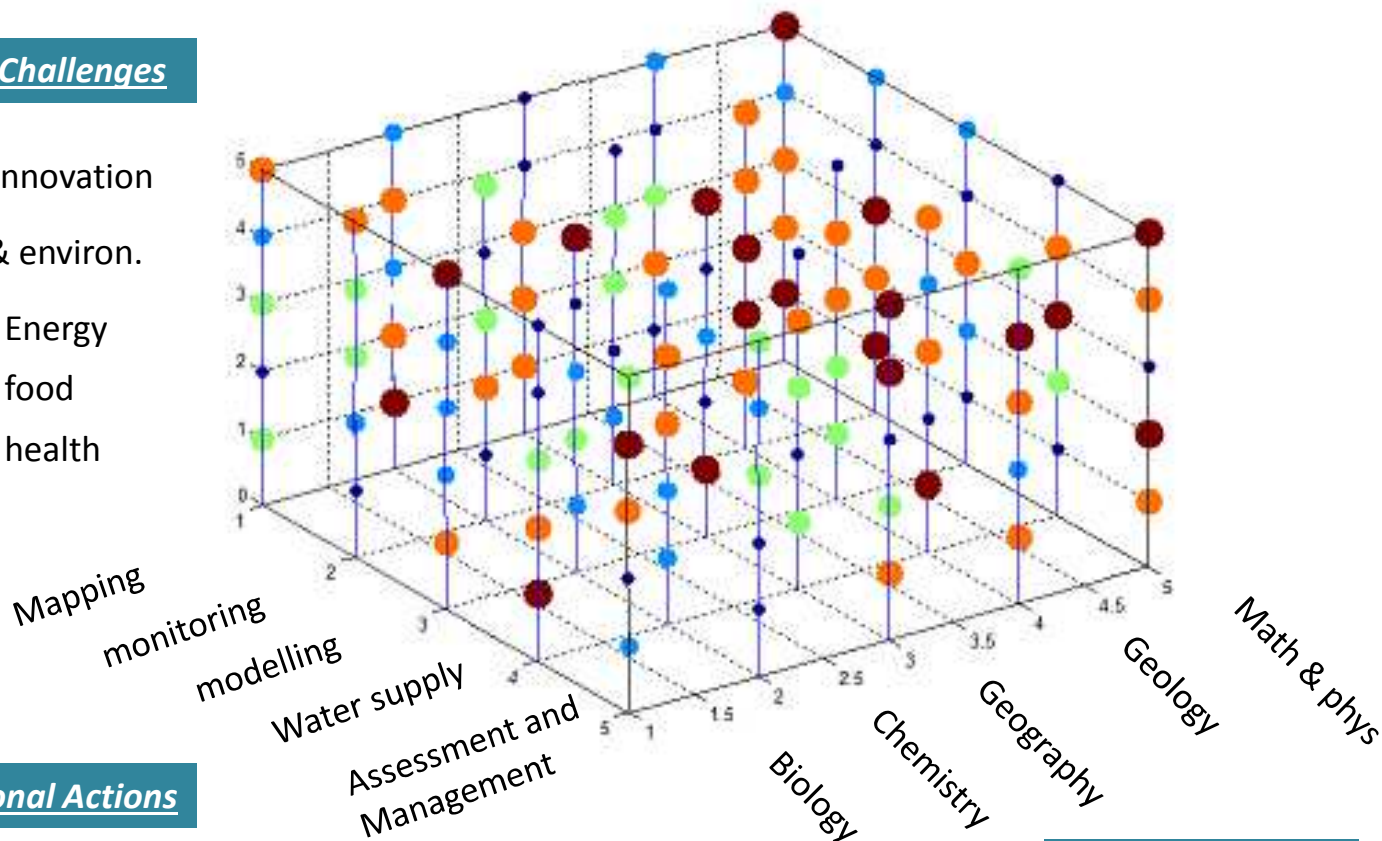
Policy & innovation

Climate & environ.

Energy

food

health



### Operational Actions

Mapping

monitoring

modelling

Water supply

Assessment and  
Management

### Research Topics

Biology

Chemistry

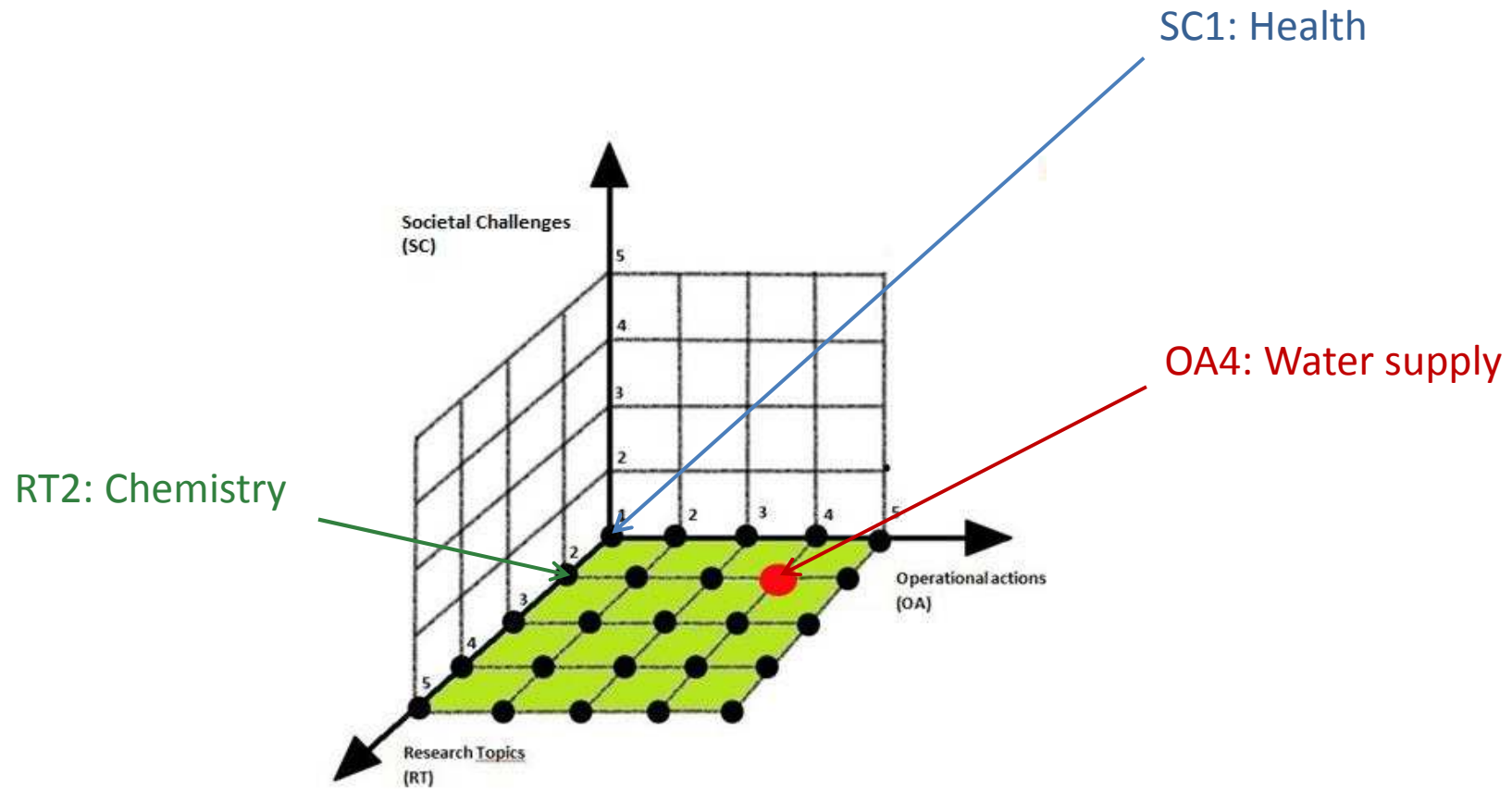
Geography

Geology

Math & phys



## Example: 2D PLOT FOR SC1: HEALTH



# The European Inventory of Groundwater Research

## -EIGR-



## Resources to be included in the EIGR (only metadata): Cooperation from 20 National Experts who populate the EIGR



**Research and applied research projects (e.g. EU and Interreg projects)**



**Technical reports and guidances**



**Surveys including relevant data and maps**



**Books and book chapters**

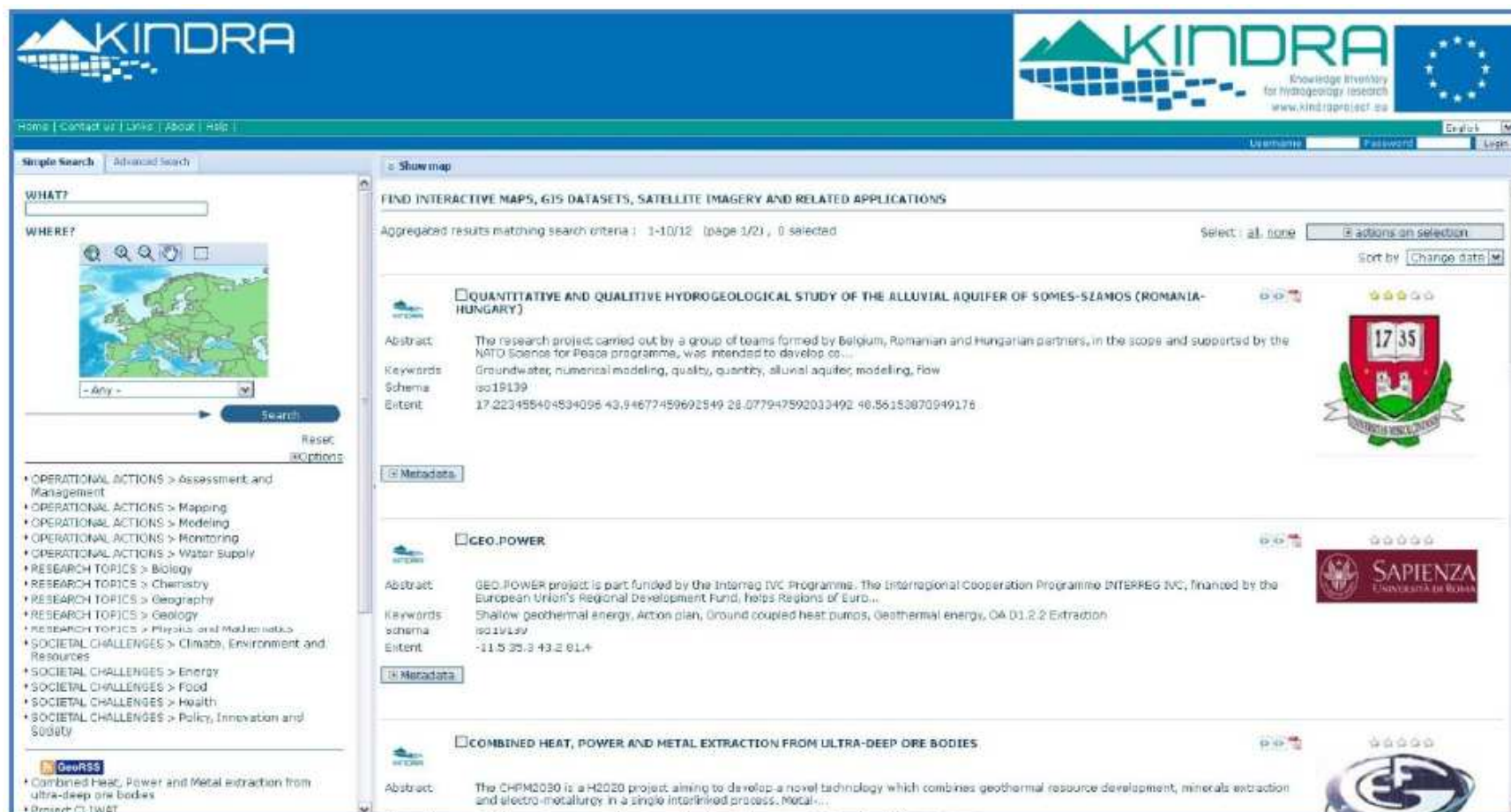


**Consulting reports for ministries and other authorities**



**Monographs etc., etc.,**

# EIGR User Interface: based on Geonetworks. EIGR user manual available



The screenshot displays the KINDRA web application interface. At the top, there is a navigation bar with the KINDRA logo and the text "Knowledge Inventory for hydrogeology research www.kindraproject.eu". Below the navigation bar, there are search options: "Simple Search" and "Advanced Search". A "Show map" button is also visible.

The main content area is titled "FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS". It shows aggregated results matching search criteria: "1-10/12 (page 1/2), 0 selected". There are controls for "Select: all: none" and "actions on selection", and a "Sort by: Change date" dropdown.

The search results are listed as follows:

- QUANTITATIVE AND QUALITATIVE HYDROGEOLOGICAL STUDY OF THE ALLUVIAL AQUIFER OF SOMES-SZAMOS (ROMANIA-HUNGARY)**
  - Abstract: The research project carried out by a group of teams formed by Belgium, Romanian and Hungarian partners, in the scope and supported by the NATO Science for Peace programme, was intended to develop...
  - Keywords: Groundwater, numerical modeling, quality, quantity, alluvial aquifer, modeling, flow
  - Schema: iso19139
  - Extent: 17.223455404534095 43.94677459692549 28.077947592033492 48.85153870949176
- GEO-POWER**
  - Abstract: GEO-POWER project is part funded by the Interreg IVC Programme. The Interregional Cooperation Programme INTERREG IVC, financed by the European Union's Regional Development Fund, helps Regions of Euro...
  - Keywords: Shallow geothermal energy, Action plan, Ground coupled heat pumps, Geothermal energy, OA D1.2.2 Extraction
  - Schema: iso19139
  - Extent: -11.5 35.3 43.2 61.4
- COMBINED HEAT, POWER AND METAL EXTRACTION FROM ULTRA-DEEP ORE BODIES**
  - Abstract: The CHPM2030 is a H2020 project aiming to develop a novel technology which combines geothermal resource development, minerals extraction and electro-metallurgy in a single interlinked process. Metal...

On the left side, there is a "WHAT?" search input field and a "WHERE?" map showing Europe. Below the map, there is a "Search" button and a "Reset" button. A sidebar menu lists various categories such as "OPERATIONAL ACTIONS" and "RESEARCH TOPICS".

The EIGR is conceived as a tool which asides from serving as an Inventory, it will also allow for



Individuals and organizations dealing with groundwater research, even non-experts, to carry out consultations during and after the project



The analysis of collected and stored information in order to identify *trends*, *challenges* and *gaps* in groundwater research.



Allow KINDRA to provide recommendations for the implementation of the Water and Groundwater Directives.



The KINDRA project EIGR can be accessed by registered users at:

*<http://kindra.kindraproject.eu/geonetwork/srv/eng/main.home>*

Thank You 😊

[www.kindraproject.eu](http://www.kindraproject.eu)

Email: [coordinator@kindraproject.eu](mailto:coordinator@kindraproject.eu)



ict4water DRIVES CIRCULAR ECONOMY  
THE IMPACTS OF INNOVATION IN FP7/H2020 PROJECTS



Jerez June 2016