

KINDRA PROJECT

Making Groundwater Visible, Accessible and Treasured



KEY POLICY MESSAGES:

VISIBLE

The European Inventory of Groundwater Research (EIGR) provides significant added values for groundwater issues, essential for correctly filling research gaps and supporting the implementation of Water policies at European Level

ACCESSIBLE

EIGR has been demonstrated to be a powerful tool for extracting, including and analysing information on groundwater research at European level, to be promoted and improved by further steps

TREASURED

From the conducted data analysis, a strong link of groundwater research and knowledge with the Horizon2020 Grand Societal Challenges is confirmed, acting as driver for transferring gap & trend analysis on policy improvements

ABOUT H2020 PROJECT KINDRA

The mission of KINDRA is to make groundwater visible by demonstrating its interdisciplinarity and importance to all the grand societal challenges of Horizon 2020 and EU water policies. The project provides a new classification system for groundwater research and knowledge, which includes the reference to the European Societal Challenges, and makes it available in the European Inventory of Groundwater Research (EIGR).

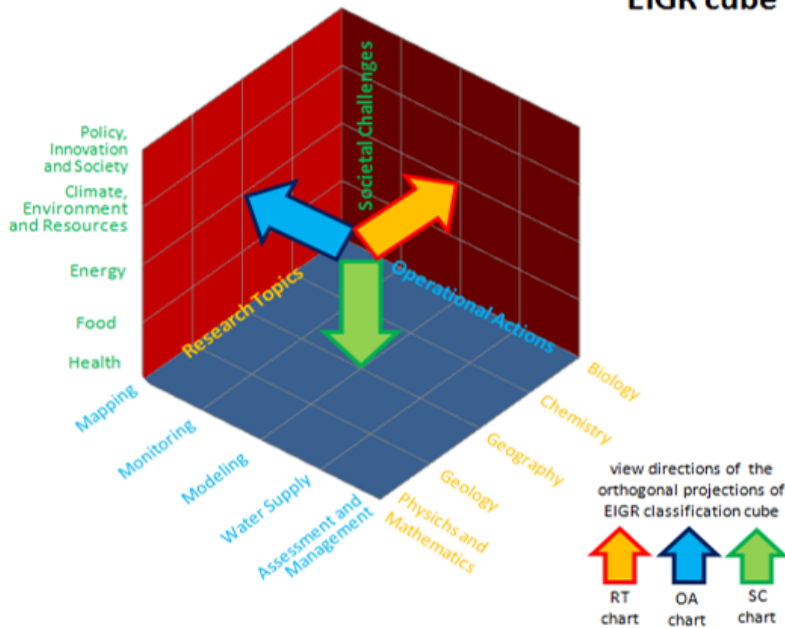
The EIGR inventory, currently containing more than 2200 records, provides a critical mass for scientific exchange of information and it is a single access point to the knowledge-base including grey literature, i.e., non-peer-reviewed documents supplementing to professional research databases of peer-reviewed scientific publications. The analysis of the content of this inventory and other research databases is useful to identify existing and missing research and knowledge supporting the implementation of the Water Framework and Groundwater Directives.

This policy brief is part of a series of two whose goal is to illustrate the KINDRA approach, achievements and future potential.



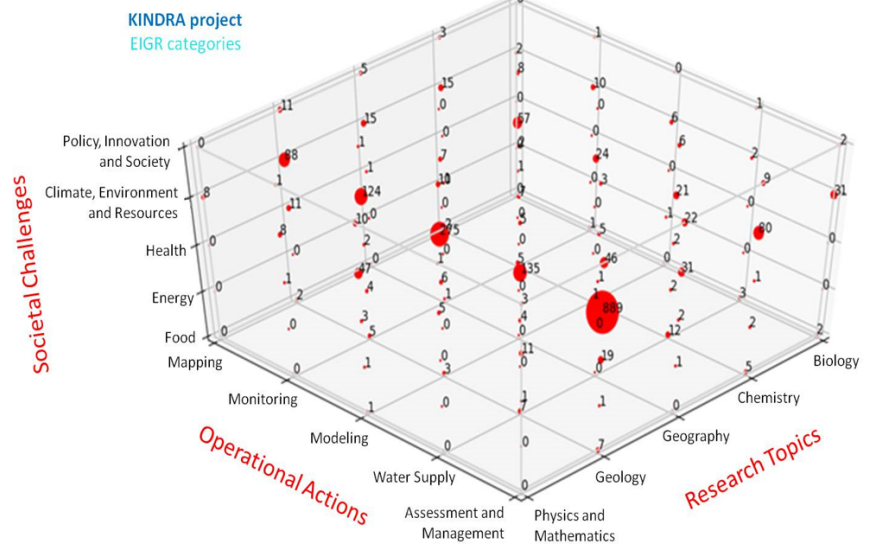
ADDED VALUES OF EIGR

EIGR cube



The 3D approach adopted in the classification system, where along each axis the 5 overarching groups of each main category are indicated.

- EIGR offers metadata on reports and research projects and data making them Findable, Accessible, Interoperable and Reusable according to “FAIR” principles of Horizon 2020. These often not peer-reviewed, but usually quality assured, data sources provide extensive information that is otherwise not available through single point access elsewhere;
- EIGR focuses exclusively on groundwater research and knowledge, increasing the precision and relevance of information retrieval conducted in the database;
- It has a dedicated platform, integrating information on groundwater research and knowledge of relevance to the whole community of researchers and practitioners, extending across groundwater relevant disciplines and EU member states organisations and sectors to the benefit of all;
- EIGR improves the overview of the vast amount of groundwater research, knowledge and data, especially within the non-peer reviewed segment (grey literature), making access to studies easier and duplication of work less likely;
- Additional web services for searches by selected keywords, and query functions for statistics, diagrams, and other dedicated data elaboration, are making EIGR a potential tool for research analysis and evaluation within its field;



Record occurrence of each intersection in the EIGR cube

- Geolocalisation of the EIGR's data offers a unique tool in information retrieval, a function that is pertinent for the groundwater research area, especially when considering the surveys and reports present in EIGR, which often are associated with a geographical location;
- Dynamical features and potential for further improvements, like adding new relevant keywords by users as they emerge in the future, are available too.

MAIN FINDINGS OF EIGR



Most popular keywords occurring in the records uploaded in the EIGR

- The suitability of the developed and adopted classification has been demonstrated during EIGR population by national experts and comparison with Scopus database, indicating that the related thesaurus of keywords is adequate and representative for classifying groundwater research and knowledge at European level;
- The distinction in the adopted classification between research and knowledge highlights the relevance and value of non peer-reviewed (grey) documents for the disclosure of hydrogeological data and knowledge available at primarily regional and national but also international levels;

- The “hydrogeological” component of the groundwater knowledge in the EIGR can be readily and easily supplemented by adding information about groundwater research developed in other related research disciplines or be expanded to become a general database on subsurface studies.

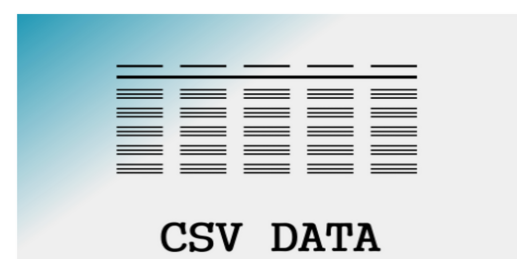
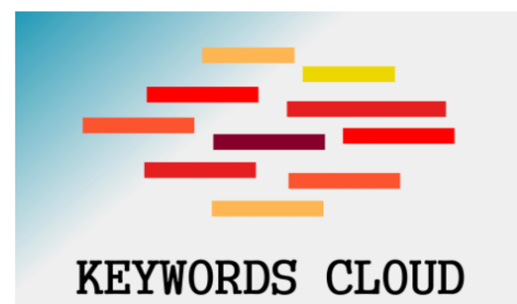
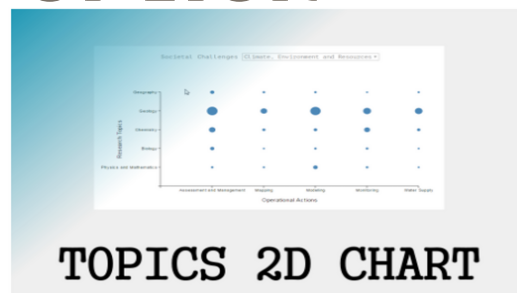


RECOMMENDATIONS FROM EIGR ANALYSIS

- The strong presence of groundwater knowledge in the societal challenge ‘Climate, Environment and Resources’, and others as well, should be operationalised to tackle these demanding challenges;
- Integrating groundwater knowledge in EU policies to support societal challenges including drinking water supply, environmental protection, remediation of pollution and monitoring, provides inherent benefits;
- While hydrogeology is still (historically) one of the main research fields dealing with groundwater, it is recommended to become part of a multidisciplinary suite of skills to promote interdisciplinary technical studies, working groups, think tanks, and other initiatives to share knowledge at national and European levels;
- The EIGR database providing information on groundwater, a basic and crucial component of the daily life of all EU citizens, has the potential to become accessible via dedicated cloud-based services.

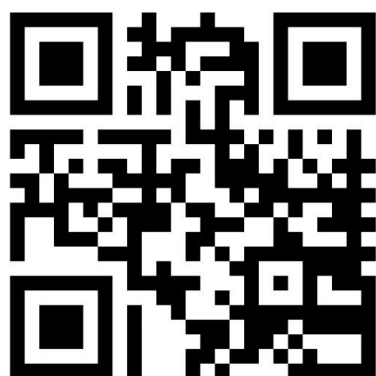
FUTURE DEVELOPMENTS OF EIGR

- Adopt a European standard for common indexing of groundwater research reports and other types of grey literature;
- Link EIGR to other related databases, making cross-references between EIGR's metadata on groundwater studies and projects and the data collected in other databases such as, e.g., the European Infrastructure for Geological Data – “EGDI”;
- Facilitate data upload procedures to make them faster and less ambiguous, thus increasing data quality and overall reliability. Improve tools for statistical analyses and visualisation, both internal EIGR tools and data export to external tools;
- Improve the search and functionality relating to the geolocation data present in EIGR;
- Extend the current classification system to accommodate groundwater research relevant for all seven grand societal challenges of Horizon 2020, as well as potential additional research topics and operational actions;
- Continuously develop the EIGR thesaurus and keyword database;
- Solicit and invite public organisations, national and international associations, potential users, private companies, scientists and practitioners to contribute to the EIGR, both by using it for searching resources and by updating the database with new records (including using data harvesting techniques).



Quick tools of EIGR

WWW.KINDRAPROJECT.EU



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LPRC - La Palma Research Centre for Future Studies S.L., SPAIN
UM - University of Miskolc, Faculty of Earth Science and Engineering, HUNGARY
GEUS - Geological Survey of Denmark and Greenland, DENMARK

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