A project on groundwater research inventory and classification to make groundwater visible

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Hydrogeology related research activities cover a wide spectrum of research areas at EU and national levels. The European knowledge base on this important topic is widespread and fragmented into broader programs generally related to waterresources, environment or ecology.

In order to achieve a comprehensive understanding on the groundwater theme, the KINDRA project (Knowledge Inventory for Hydrogeology Research - www.kindraproject.eu) seeks to carry out an accurate assessment of the state of the art in hydrogeology research and to create a critical mass for scientific knowledge exchange of hydrogeology research, to ensure wide accessibility and applicability of research results, including support of innovation and development, and to reduce unnecessary duplication of efforts.

The first two years of the project have focused its efforts in developing the concept of a Harmonized Terminology and Methodology for Classification and Reporting Hydrogeology related Research in Europe (HRCSYS) as well as its implementation in the European Inventory of Groundwater Research (EIGR).

For developing the common terminology, keywords characterizing research on groundwater have been identified from two main sources: the most important EU directives and policy documents and from groundwater related scientific literature. To assess the importance and pertinence of the keywords, these have been ranked by performing searches via the Web of Science, Scopus and Google Scholar search engines. The complete merged list of keywords consisting of more than 200 terms has been organized in a tree hierarchy, identifying three main categories: Societal Challenges (SC), Operational Actions (OA) and Research Topics (RT). The relationships among these main categories expressed by a 3D approach, identifying single intersections among 5 main overarching groups for each category.

The EIGR itself contains metadata (about 1800 records at the moment) of research efforts and topic related knowledge deliverables (scientific reports, articles, projects, etc.) illustrating and providing links to research efforts carried out through Europe since 2000, indicating where data can be retrieved, and following their classification according to the proposed methodology.

Both the HRC-SYS classification approach and the EIGR tool, are fundamental to achieve the main aim of the KINDRA project: to create an overview of the scientific knowledge covering European countries by means of an accurate assessment of hydrogeology research in various geographical and geo-environmental settings, and to allow for a direct comparison and exploit existing synergies.

The scope of the project also includes identification of future trends, critical challenges and research gaps, to improve management and policy development for groundwater resources on a EU level coherently with the Water Framework Directive (WFD) and Groundwater Directive (GWD). As part of the work to be carried out in 2017, the identified research gaps will be converted into specific recommendations for the further development of EU level policies and research programmes.