KINDRA DELIVERABLE D3.2

FINAL PROJECT CONFERENCE

Summary:

The KINDRA Final Conference took place in Brussels the 27th of February 2018. The aim of the full-day conference was to disseminate the results achieved by the project, from the new classification system, to the inventory of hydrogeological products (EIGR) and its content of more than 2000 metadata to a variety of stakeholders.

The final conference allowed partners, experts and stakeholders to exchange views on the main outcomes of the project and to discuss the future of the inventory, as different options for the future of EIGR were proposed and debated.

Presentations (as a pdf), photos, the results booklet and the videos of Sessions 2 (KINDRA main outcomes) are available for download on the project website:
http://kindraproject.eu/final-conference/

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1. INTRODUCTION

One of the main aims of the KINDRA project was to carry out a Europe-wide assessment of existing groundwaterrelated practical and scientific knowledge focusing on international (in EU dimensions), national and regional scientific activities. The data collection and assessment was implemented with the help of the National Association members of the European Federation of Geologists that took part in the project as EFG Linked Third Parties. Based on the data provided, a European Inventory (database) of Groundwater Research (EIGR) was created in form of a web-service (Geonetwork).

The project Final Conference took place the 27th of February, 2018, hosted in the Academie Royale Belgique, Brussels organised by the cooperation of EFG, Sapienza and LPRC. 48 people from all over Europe attended the conference. The attendees were from different European countries. It has to be mentioned that the number of registered participants was higher (70 registrations), but the extreme weather conditions around Europe and the strike oragnised by the public transport companies in the Brussels region made it impossible for some people to travel to Brussels on time.

2. BACKGROUND AND AIMS OF THE FINAL CONFERENCE

Groundwater and hydrogeology-related research activities cover a wide spectrum of research areas at EU and national levels. However, groundwater issues are quite often either ignored or considered only in insufficient detail and separated from the associated surface water bodies,despite of its critical importance as renewable, high-quality, naturally protected (but still vulnerable) resource that has significant impacts on both surface water bodies and ecosystems. The KINDRA project (Grant Agreement No. 642047, www.kindraproject.eu) created a critical mass for scientific knowledge exchange of hydrogeology research, to ensure wide applicability of research results, including support for innovation and development. The overall objective of the project was to take stock of our current knowledge of hydrogeology through an inventory of research results, activities, projects and programmes at national and international scale.

The final conference was aimed to communicate the results achieved by the project, from the new classification system, to the inventory of hydrogeological products (EIGR) and its content of more than 2000 metadata, to be used for evaluating the state-of-the-art of European research & knowledge on groundwater. Results of inserted data have been critically analysed, to identify modern challenges, trends and gaps in groundwater science and practice. Obtained results need to be discussed with institutions, associations, stakeholders and decision makers, with the aim to identify a road map for developing policies, strategies, and management options at European level, able to highlight and correctly evaluate the importance of groundwater for both human requirements and environmental needs, in the framework of the circular economy, the

water-food-energy nexus, the zero-waste goal, the sustainable development goals and the optimization of natural resources.

3. PARTICIPANTS OF THE FINAL CONFERENCE

Registrations for the KINDRA Final Conference were collected online via the EFG website. Several circulars were sent to invite interested people and stakeholders to this event. The Final Conference was also widely promoted through the different social media channels of the KINDRA project and also through the project partners' social media platforms. 70 people registered for the event and 48 people attended the conference. The attendees were from 16 different countries (Belgium, Czech Republic, Denmark, France, Germany, Greece Hungary, Italy, The Netherlands, Portugal, Serbia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom) representing various different target groups from acedemy to industry, managing authority representatives to policy makers.

In addition to the consortium partners, 5 members of the project Joint Panel of Expert (JPE) were also present with a leading role in the organisation of the sessions. Also, some EFG Linked Third Parties responsible for uploading data to the inventory attended the conference (Professional Association of German Geoscientists, Portuguese Association of Geologists and Czech Association of Economic Geologists).

The list of participants (name and organisation) of the Final Conference can be found in Annex 3.

4. CONTENT OF THE FINAL CONFERENCE

The full-day conference (09:00 - 18:00) showcased the results achieved by the project, such as the KINDRA Classification, Inventory, as well as the methodology used for identifying gap analyses and its results, and started a conversation about the future of the KINDRA outcomes with stakeholders and decision-makers to identify a roadmap for developing policies, strategies, and management options at European level related to groundwater.

The conference was opened by the European Federation of Geologists (EFG) Executive Director Ms. Isabel Fernandez. She welcomed the participants and presented EFG. Ms. Isabel Fernandez recalled the original motivations that led to the design of the KINDRA project. These were the need felt by geologists to raise more attention on groundwater issues at European level as first, and the lack of European ability to share groundwater knowledge existing in the various EU countries as second. She also explained the role of the different partners in the project. La Palma Research Centre helped with the methodological approach and lead the project communication & dissemination activities by designing materials including those prepared for the general public. Sapienza coordinated and provided scientific backbone together with University of Miskolc especially when setting-up the harmonised methodology (HRC-SYS). The Geological Survey of Denmark and Greenland (GEUS) represented the Geological Surveys in Europe and lead WP3 (Gap & Trend analysis). As an experienced partner in data collection on environmental issues, the Environmental and Water Agencyof Andalusia (REDIAM) played a key role in the development of the project inventory. EFG took part mobilising its expert network for data uploading and dissemination of the achievements.

After this short introduction of the project, Ms. Isabel Fernandez introduced the speakers of the Opening Session, Mr.

Johan Stierna, EU Senior Policy Officer involved in framing the new future research policy of the EU and Ms Elisa Vargas, EU officer involved in the European Groundwater legislation.

Mr. Johan Stierna stated that H2020 is the biggest research programme in the world, and also the most comprehensive. He explained that a mid-term evaluation on H2020 has been done and it was very positive. He pointed out that funding more projects, like KINDRA, would be possible and highlighted some aspects that could be improved in all the H2020 projects:

- Concrete results for citizens
- Breakthrough market-creating innovation
- Synergies with Structural Funds and Investment Fund
- Reduce fragmentation of instruments
- Oversubscription is costly (too low success rates imply a lot of useless work in writing and evaluating)
- Trigger private investment in R&I

New approaches to projects, as Open Science, missions and EIC were discussed. Amongst them, especially Open Science as it is directly related to KINDRA activities.

The success of "mission-oriented approaches" are being analysed today to see how this approach can be adapted to the EU context.

Answering the question “What is a mission of the 21th century?”, Mr. Johan Stierna stated that missions should be concrete and specific, should address the big challenges but be defined by a target (for example, the achievement: yes or no).

The projects should work together towards the mission with a continuous flow of knowledge. The networking and the exchange of ideas should be linked to open data and open science as well. The monitoring and evaluation process should be steered at the mission level. Mr. Johan Stierna also informed about a call

Picture 1: Johan Stierna was the first speaker of the conference

for feedback on various "mission-oriented approach" reports (open until 3 April, 2018). It is not a formal public consultation but everybody can contribute.

Ms. Elisa Vargas presented the EU Groundwater Directive 2006/118/EC on the protection of groundwater against pollution and deterioration. She explained the importance of groundwater, that makes up 97% of all freshwater available on Earth. Then she offered an overview of the origin of the Groundwater Directive. She explained the collaborative structure set up to organise the monitoring of the achievements, in which the Commission involves many stakeholders from the field: Working Groupson Ecological Status, Groundwater, Data and Information Sharing, Chemicals, Floods. Ms. Elisa Vargas reminded that the Water Framework Directive (WFD) and the Groundwater Directive should be read together and she gave an overview of its qualitative and quantitative objectives.

In 2019, the WFD will be checked, assessing its relevance, effectiveness, efficiency, coherence and EU added value with the aim to ensure that EU policies achieve objectives at a minimum cost.

The European Water Conference to be held in Vienna this September will represent the centre of groundwater the public consultation. She highlighted that the KINDRA inventory can be very helpful in the activities of the EU policy bodies.She thanked the KINDRA team to have always actively shared the progress of the project in the Working Group Groundwater.

At the end of the first session conference participants asked questions to the speakers and there was an exchange of ideas regarding the H2020 projects and EU legislation.

Picture 2: Elisa Vargas addressed the EU legislation on

During the following session the consortium presented the main outcomes of the project. Mr. Carlos Martínez Navarrete, the chairperson of the session gave a brief overview

of the outcomes of the project and introduced the partners responsible for presenting the results in detail. Mr. Marco Petitta, the Project Coordinator from Sapienza University, explained the overall aims, expectations and final results of KINDRA. Mr. Klaus Hinsby, from GEUS, explained the unique project classification system, while Mr. Clint Garcia Alibrandi, from REDIAM, presented the EIGR, the online project inventory. Last but not least,

Klaus Hinsby on behalf of the GEUS (Mr. Peter van der Keur & Breum Mads) gave the most important highlights of the gaps & trends analysis carried out as part of WP3. The whole session was being recorded and will be made available for future view on Youtube and on the project website. In addition, all the three presentations were live streamed on Facebook in order to reach those who could not make it to participate in person.

After this section, there was a Question & Answer session were participants shared their ideas on how to motivate people to keep the database updated, the future of the EIGR and noted the need to review the nomenclature used in the project.

After the lunch break, the programme was focussing on the potential users of the KINDRA database. Ms. Heidi Barlebo from GEUS was the chairperson and she introduced the different speakers. Mr. Tom Diez, from De Watergroep talked about the forthcoming revision of the Drinking Water Directive, including hazard assessment, risk-based approach to water safety and obligations

utcomes of

Picture 4: and Picture 4: Tom Diez Heidi Barlebo

for water suppliers to enhance prevention. Water operators are among the main actors in protection and management of ground water resources. Mr. Diez explained that there was a huge need of practical and scientific knowledge and that KINDRA was providing better access to this information.

Mr. Rob Ward, from EGS, explained what the survey and its 37 national geological surveys do and what are its objectives. EGS has a group focusing on water, Water Resources Expert Group (WREG), headed by Mr. Klaus Hinsby.

The next speaker was Mr. Johannes Grath, co-Chair of the EC Working Group Groundwater, member of the EFG Panel of Experts on Hydrogeology and WREG. Mr. Grath explained that not only drinking water but also ecosystems are vulnerable and affected by groundwater quality and quantity. He illustrated the work of the Working group. In particular, the concepts developed for the preparation of the voluntary Watch List were outlined, as well as the information exchange between the WFD and the Drinking Water Directive (DWD).

Mr. Youssef Filali-Meknassi from the Water Information Network System (WINS) of UNESCO explained that UNESCO runs an International Hydrological Programme (IHP) that includes 116 members (of the 195 UN member states). WINS is open access, but it is made for institutional memory of the work related to water. It has also a place for working groups that users can join. The goal is similar to KINDRA but the subject is broader: water.

Ms. Teodora Szocs, Vice President of International Association of Hydrogeologists, IAH, outlined the history, objectives, activities of her organization. She emphasized the importance of KINDRA in the IAH community. The contribution of IAH members could be relevant to continue to

nurture the KINDRA database.

The topic of the fourth section was focussing on future opportunities. The chairperson was Mr. Alecos Demetriades from the Commission on Global Geochemical Baselines of the International Union of Geological Sciences (IUGS).

The first speaker of this section was Ms. Klio Monokrousou from the National Technical University of Athens. Ms.

Monokrousou presented SUBSOL and its objective: providing coastal subsurface water solutions and bringing them to the market. SUBSOL also developed a knowledge environment which is an online platform and contains a knowledge base, toolbox and market place. It develops business cases, technological participatory assessments with stakeholders, market

analysis of target regions and strategy for commercialization. The Knowledge Environment offers the possibility of linking with other platforms on a dedicated tool and Kindra is considered an interesting candidate. SUBSOL team is currently trying to create interoperability with EIP Water market place, and wishes to do the same with KINDRA.

Ms. Yvonne Schavemaker from TNO,Geological Survey of the Netherlands introduced the GeoERA information platform. Ms. Schavemaker showed pictures that evince the noncompatibility of current data and discusses how homogenization is being tackled. GeoERA focuses on energy, groundwater and minerals. All data will be FAIR (findable, accessible, interoperable, re-usable) and linked to INSPIRE regulations. GeoERA is based on the European Geological Data Infrastructure (EGDI), developed by the EGS. Synergies with KINDRA could be created in the framework of the development of the GeoERA Information Platform (GIP).

Ms. Lydia S. Vamvakeridou-Lyroudia from Exeter University presented ICT4Water cluster, a centre for water system at the Exeter University with 15 years of history. The cluster is engaged in 30 EU projects on smart water. Ms. Vamvakeridou-Lyroudia emphasized that it is not possible to make policies in one sector without thinking of the impacts in other sectors. She highlighted the many sectors with which the digital water is crossing. The Action Plan ICT4 Water has been developed without any additional funds

to the panel members.

Mr. Morten Ejsing Jørgensen from the City of Copenhagen presented NAIAD and how it applies an urban groundwater perspective. He highlighted that EIGR research and knowledge can be very important for addressing groundwater management in cities.

Mr. Arnaud Sterckx, from the Global Groundwater Information System (GGIS) of IGRAC, explained that IGRAC has a particular emphasis on developing countries to support their

sustainable development. And that GGIS is essentially a database of maps, but contains also the section MIM. MIM is the meta-information Module, to share any information which is not a map. The MIM works similarly to KINDRA, including reports, guidelines and protocols. The information is classified by region, theme, nature, and type.

Many information is incomplete (and sometimes incorrect), because there is no quality check. It is not an open source software, but for the moment IGRAC is not going to move to Geonetwork, as this action should be too expensive. GGIS is powerful for sharing information but KINDRA has shown interesting ways of improvement. An assessment could be done to decide if the EIGR could be embedded in GGIS replacing the MIM.

The closing panel debate was focused on the exploitation of the EIGR. Panel members considered that funding should come from the EC and WG community. Nevertheless, the EC is not able to provide long-term funding. An option commented was to receiveSME instrument funding, for example for the start-up/early exploitation if a commercial business model could be found. Also, the LIFE programme for demonstration and market uptake could be assessed.

Some people wondered why EGS could not integrate KINDRA as an instrument to harmonise and collect their resources, but KINDRA would need to be compliant with the system EGS is already using and an assessment needs to be done first by ICT professionals and this would take some time.

Regarding the collection of data, it was discussed that it is necessary to convince the public and the private sector that it is good for them to upload data into the system. It would be good for their reputation and EFG and EGS would have an important role on promoting this. Many data come from companies and they are not willing to share their information unless they are obliged to do so. Usuallythe private sector does not share information as the data can be environmentally sensible and also because there are time and financial constraints.

It is necessary to motivate the private sector to share information. In the Czech Republic, for example, companies have an advantage of accessing public archives: national rules impose to first consult the national archive

to see if what it is needed already exists; and after the work is finished it is published in the archive. This way, all companies can take profit of previous works performed by other companies.

It was also highlighted that GW authorities could be interested in the EIGR, to avoid the payment of research services and data that have already been performed and collected. In conclusion, a KINDRA follow-up should probably focus on how to attract GW institutions and companies that produce and need reports.

The last speaker of the conference was Mr. Philippe Quevauviller, from EC DG HOME. He worked on the development of the GWD. He stated that also Member States could be potential users of the EIGR as they are implementing the GWD. He also considered that other potential clients could be the Joint Research Centre (JRC) and other EU Agencies. Many EU agencies and Directorate Generals (DGs) policies are affected by groundwater issues, as DG Environment, DG for Climate Action, DG Health and Food Safety, DG for International cooperation and Development, DG for Migration and Home Affairs (disasters), European Environmental Agency, DG for European Civil Protection and

Humanitarian Aid
Operations (civil protection).

Philippe Quevauviller gave also an interesting insight in how to build a community.

The successful final conference gathered partners, experts and stakeholders to discuss the main outcomes of the project and the future of the inventory. Stakeholders showed their interest in the inventory and in the future of the database. It was clear that the inventory would be very useful for several stakeholders from the public and the private sector, as for example, the European institutions or the water operators. The option of the inventory being integrated into other existing platforms was also discuss and contemplated. Also, the need to encourage the uploading of data to the inventory was debated. Specially, it was addressed the need to stimulate the private sector upload data to EIGR.

Annex 1: Agenda of the Final Conference

Section 1: ***Opening session*** **Chairperson: Isabel Fernandez - European Federation of Geologists**	
9:00-9:10	Welcome EFG
9:10-9:40	*Towards a mission-oriented research and innovation policy in the EU – knowledge contribution of science* Johan Stierna, European Commission, DG Research and Innovation, Policy Development and coordination, Unit A6
9:40-10:05	*The EU Groundwater Directive* Elisa Vargas, European Commission, DG Environment, Chair of EC Working Group Groundwater, Common Implementation Strategy of WFD

10:05-10:30	*Coffee break*

Section 2: KINDRA outcomes **Chairperson: Carlos Martínez Navarrete - Geological Survey of Spain (IGME)**	
10:30-10:50	*KINDRA project: aims, expectations and final results* Marco Petitta, Project Coordinator - University of Rome Sapienza
10:50-11:10	*KINDRA Classification* Klaus Hinsby - Geological Survey of Denmark and GreenLand (GEUS)
11:10-11:30	*KINDRA Inventory* Clint Garcia Alibrand - Environmental and Water Agency of Andalusia (REDIAM)
11:30-11:50	*KINDRA Gaps analysis* Peter van der Keur - Geological Survey of Denmark and GreenLand (GEUS)
11:50-12:10	*Discussion* *Q&A*
12:10-13:10	*Lunch break*
Section 3: KINDRA inventory potential users **Chairperson: Heidi Barlebo - Geological Survey of Denmark and GreenLand (GEUS)**	
13:10-13:30	Tom Diez - De Watergroep, Brussels
13:30-13:50	Rob Ward, Water Resources Expert, Eurogeosurveys and Director of Groundwater Science, British Geological Survey
13:50-14:10	*Activities of CIS WG Groundwater,* Johannes Grath, co-Chair of EC Working Group Groundwater, Common Implementation Strategy of WFD, Umweltbundesamt

14:10-14:30	*Water Information Network System (WINS),* Youssef FilaliMeknassi, UNESCO-IHP, Paris
14:30-14:50	Teodora Szocs, Vice President of International Association of Hydrogeologists; Mining and Geological Survey of Hungary
14:50-15.20	*Coffee break*
Section 4: Future opportunities **Chairperson: Alecos Demetriades – IUGS Commission on Global Geochemical Baseli ıes**	
15:20-15:40	*SUBSOL Knowledge Environment - Potential links with KINDRA*
	Klio Monokrousou, National Technical University of Athens, SUBSOL
15:40-16:00	*GeoERA information platform* Yvonne Schavemaker, coordinator - TNO Geological Survey of the Netherlands Klaus Hinsby - Geological Survey of Denmark and GreenLand (GEUS)
16:00-16:20	*ICT4Water cluster* Lydia S. Vamvakeridou-Lyroudia, Exeter University
16:20-16:40	*NAIAD - nature-based solutions and green/blue infrastructure* Morten Ejsing Jørgensen - City of Copenhagen
16.40-17.00	*IGRAC, Global Groundwater Information System (GGIS)* Arnaud Sterckx – IGRAC, UNESCO
Panel Discus sion: **KINDRA Joint Panel of Experts**	
17:00-17:40	Debate
Closing section	
17:40-18:00	*Groundwater – Reconciling science and policy?* Philippe Quevauviller, Policy and Research Programming Officer at European Commission, DG HOME