

KINDRA DELIVERABLE D4.9

SECOND WORKSHOP WITH THE JOINT PANEL OF EXPERTS

Summary:

This document reports on the second workshop organised with the Joint Panel of Experts of the KINDRA project that took place on the 22th of June 2016. These workshops provide opportunities to improve the outcomes of each work package, and supply the widest reaching opportunities for dialogue and engagement with other networks and a series of stakeholders. In this second workshop the knowledge inventory was evaluated, in particular regarding quality assurance for uploaded data, exploitation potentials, and data processing tools for the assessments to be performed next year in WP3. In this document the agenda of the meeting, participants-list, all presentations, a summary of discussions and some pictures can be found.

Authors:

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WATER-4a-2014
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1. SUMMARY

This document reports on the second workshop organised with the Joint Panel of Experts (JPE) of the KINDRA project that took place on the 22th of June 2016. These workshops provide opportunities to improve the outcomes of each work package, and supply the widest reaching opportunities for dialogue and engagement with other networks (such as EIP on Water, WssTP) or) and a series of stakeholders. In this second workshop the knowledge inventory was evaluated, in particular regarding quality assurance for uploaded data, exploitation potential and data processing tools for the assessments to be performed next year in WP3.

The workshop was followed-up by a wrap-up meeting between the partners, concluding and defining next steps following the findings of the internal partner-meeting of the 21th of June as well as this JPE workshop. In this document the agenda of the meeting, participants-list, all presentations, a summary of discussions, conclusions and some pictures are provided.

2. PROGRAMME



Agenda of the Copenhagen Meeting & JPE Workshop, June 21-23, 2016

JPE WORKSHOP, Wednesday June 22

- 9.00-11.00 Results from WP1
- 9.00-9.30: Introduction to the KINDRA project: objectives, performed activities, expected results *Marco Petitta, KINDRA project coordinator, Sapienza*
- 9.30-10.00: WP1: The Classification System HRC-SYS *Klaus Hinsbv, GEUS*
- 10.00-10.30: WP2: The structure of the European Inventory for Groundwater Research EIGR *Clint García-Alibrandi, REDIAM*
- 10.30-11.00 Discussion with Joint Panel of Experts
- 11.00-11.30 Coffee break

11.30-12.50 Results from other WPs

11.30-11.50: WP2 Data collection - role of EFG national experts and ongoing activities *Isabel Fernandez, EFG*

- 11.50-12:30: WP2 Data processing: indicators and tools to be adopted for WP3 & WP3 Research gaps and recommendations objectives for the next year *Marco Petitta, Sapienza & Peter van der Keur, GEUS* 12.30-12.50: WP4 Dissemination and communication: achieved results and next steps
- 12.30-12.50: WP4 Dissemination and communication: achieved results and next steps *Adrienn Cseko, LPRC*
- 12.50-14.00 Lunch

14.00-17.30 Round Table on next steps

14.00-15.30 How to populate the EIGR? Suggestions and comments by JPE

15.30-16.00 Coffee break

16.00-16.30 Identification of gaps for policy implementation16.30-17.00 Contacts and links with other projects, common dissemination strategies17.00-17.30 Wrap Up and next steps & meetings

19.00 Dinner with JPE members

3. LIST OF PARTICIPANTS

Partners:	
Marco Petitta	Universita degli Studi di Roma La Sanienza
Gertruud van Leijen	
Isabel Fernandez	The European Enderstion of Goologists
Eva Hartai	The European rederation of Geologists
Mercedes García-Padilla	Agencia de Madia Ambiento y Agua de Andelucia
Clint García-Alibrandi	Agencia de Medio Ambiente y Agua de Andalucia
Adrienn Cseko	La Palma Research Centre for Future Studies SL
Viktória Mikita	Miskolci Egyetem
Peter van der Keur	Coological Survey of Denmark and Creenland
Klaus Hinsby	

Elisabetta Preziosi	Researcher at CNR-IRSA (National Research Council - Water Research Institute)
Alecos Demetriades	Consultant in Mineral Exploration, Applied Geochemistry and Environmental impact assessment
Gesche Grützmacher	OE Wasserversorgung Leiterin Wasserwirtschaft
José Martins Carvalho	General Director of Terra, Ambiente e Recursos Hídricos, Lda (TARH)
Carlos Martínez Navarrete	Researcher at the Research and Geoscientific Prospective Department, Geological Survey of Spain (IGME)
Teodora Szocs	head of the Department of Hydrogeology, Geological and Geophysical Institute of Hungary (MFGI).
Robert S. Ward	Director of Groundwater Science, British Geological Survey
Heidi Barlebo	Geological Survey of Denmark and Greenland

JPE Board members¹

4. DOCUMENTS PROVIDED TO THE JOINT PANEL OF EXPERTS

Prior to the workshop the following documents have been provided to the members of the JPE:

Agenda

D1.2 Harmonized terminology and methodology for groundwater research classification (HRC-SYS)

- D1.3 EIGR guidance document
- D1.4 In-house inventory of information sources
- D1.5 European inventory of groundwater research: EIGR demo version
- D1.6 EIGR beta version final
- D1.7 Selection of groundwater related aspects relevant for implementation of WFD and GWD

Introduction Workshop Siviglia - PPT

- D2.1 Orientation workshop for national EFG representatives
- D4.7 Report on end-users requirements

5. PRESENTATIONS

Project leader Marco Petitta welcomed the participants, thanked his staff and all partners for the work performed to prepare this workshop and the JPE members for their engagement. Thereafter the project's achievements so far were presented in a series of interventions, that were followed up with short questions and comments. In the afternoon an open discussion on most relevant issues in this stage took place, reflecting on the achievements and their possible use for next steps, and identifying criticalities and issues to be faced by the partnership in forthcoming months.

Here below all presentations are reproduced. In the following chapter 6 main issues raised after the presentations and during the round table are shortly outlined, together with the conclusions.

¹ Members that were unable to participate: Kevin T. Cullen, Georgia Destouni.















The EIGR is populating by the following national experts of the EFG:			
	Country	Organisation	Expert's name
1	Belgium	Belgo-Luxembourg Union of Geologists	(1) Alain Dassargues (2) Dirk de Coste
2	Croatia	Croatian Geological Society	Kosta Urumović
3	Czech Republic	Czech Association of Economic Geologists	Michal Vaněček
4	Denmark	Geological Society of Denmark	Lisbeth Flindt Jørgensen
5	Finland	The Finnish Union of Environmental Professionals	Ulpu Väisänen
6	France	French Geological Society	Patrick Lachassagne
7	Germany	Professional Association of German Geoscientists	Walter Lenz
8	Greece	Association of Greek Geologists	Triantafillos Kaklis
9	Hungary	Hungarian Geological Society	Nóra Gál
10	Ireland	Institute of Geologists of Ireland	Henning Moe
11	Italy	Italian National Council of Geologists	Andrea Del Bon
12	The Netherlands	Royal Geological and Mining Society of the Netherlands	Jan Stafleu
13	Poland	Polish Association of Minerals Asset Valuators	Barbara Tomaszewska
14	Portugal	Portuguese Association of Geologists	Mónica Sousa
15	Serbia	Serbian Geological Society	Vesna Ristic Vakanjac
16	Slovenia	Slovenian Geological Society	Mihael Brenčič
17	Spain	Official Spanish Association of Professional Geologists	Silvino Castaño Castaño
18	Switzerland	Swiss Association of Geologists	Pierre Christe
19	Ukraine	Ukrainian Association of Geologists	Alexander Bobrov
20	United Kingdom	Geological Society of London	Andy McKenzie





















































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RES		NTIFICATION INFO	RMATION	
Poir Org Con	nt of contact: (Identificat anization's name*: tact's position:	ion of the person and organization re	sponsible of the resource)	
	▼ Point of contact ■			
	Individual name 🖄	Nicolò Colombani	English 👤	
	Organisation name 🗵	University of Sapienza	English 💌	
	Position name 🗵		English -	
			(\$\$)	
		WP1: the structure of the European Inventory for Groundwater Research (EIGR)		11

	10
RESOURCE IDENTIFICATION INFORMATION	
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v Address 🗠	
× Address P Address Delivery point ⊞ ⊠ p.le A. Moro, 5 English ▼	
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Website Hours of service Contact instructions WP1: the structure of the European Inventory for Groundwater Research (EIGR)	12













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Linkage	https://www.secarchaste.est/aublication/7	
Protocol	https://www.readersrigeverney.publication/2	
Name of the resource	Numerical accessment of effective evanetral	<u> </u>
Description (2)	Made available as "personal author copy English	
Description is	before final publication" on Researchgate	



		19
DATA QUALITY	INFORMATION	
r ▼ Lineage ⊠ r ▼ Lineage Statement ⊠		_
	TRL 2: technology concept formulated	
A brief description on the reason Process step, in the tag indicate concept developed):	for including the resource in the specific classes should described in ad as Description (e.g. Private and Public Research Project, techn	section Iological
▼ Process step 🗄 🛙	5]	-
Description *	Research Project born from the Private and Regional Public Sectors.	*
	Development of new sensors for G.W.B. detection	a
	Inventory for Groundwater Research (EIGR)	21







WP2 – Description of work
Task2.1: Orientation workshop for EFG's national
representatives (EFG, SAPIENZA).
D2.1: Orientation workshop for EFG's national
representatives. Month 12
Task 2.2: National Workshops on Hydrogeology (EFG,
SAPIENZA)
D2.2: National Workshops on Hydrogeology. Month 20
Task 2.3 Data collection and processing (REDIAM, EFG, UM
SAPIENZA, GEUS, LPRC)
D2.3 Country Reports, Month 24
D2.4 EIGR Datasheets, Month 24



KINDRA LIIKEU TIIIU Parties. 20	Countries
EFG Member	Country
Belgo-Luxembourg Union of Geologists	Belgium-Luxembourg
Croatian Geological Society	Croatia
Czech Association of Economic Geologists	Czech Republic
Danish Geological Society	Denmark
The Finnish Union of Environmental Professionals	Finland
France (EFG)	France
Professional Association of German Geoscientists	Germany
Association of Greek Geologists	Greece
Hungarian Geological Society	Hungary
Institute of Geologists of Ireland	Ireland
Italian National Council of Geologists	Italy
Royal Geological and Mining Society of the Netherlands	Netherlands
Polish Association of Minerals Asset Valuators	Poland
Portuguese Association of Geologists	Portugal
Slovenian Geological Society	Slovenia
Serbian Geological Society Country	Serbia
Official Spanish Association of Professional Geologists	Spain
Swiss Association of Geologists	Switzerland
Ukrainian Association of Geologists	Ukraine
Geological Society of London	UK



Task2.1: Orien national repre 5 Februar	ntation workshop for EFG's sentatives (EFG, SAPIENZA) Ty 2016 in Seville (M14)	I
Experts	name	
Belgium	Alain Dassargues	
Belgium	Dirk de Coster	
Czech Republic	Michal Vaněček	
Denmark	Lisbeth Flindt Jørgensen	
Finland	Ulpu Väisänen	
Germany	Walter Lenz	
Greece	Triantafillos Kaklis	
Italy	Andrea Del Bon	
Netherlands	Robert Warmer	
Poland	Marta Dendys	
Portugal	Mónica Sousa	
Serbia	Vesna Ristic Vakanjac	
Slovenia	Mihael Brenčič	
Spain	Silvino Castaño Castaño	
Ukraine	Alexander Bobrov	
United Kingdom	Andy McKanzia	



Task2.1: Orientation workshop for EFG's national representatives (EFG, SAPIENZA)

9 May 2016 online Orientation workshop for EFG's Invited/participants

Croatia: Kosta Urumović Hungary: Peter Scharek Ireland: Henning Moe Switzerland: Pierre Christe EFG: Vanja Bisevac

SAPIENZA)	eology (EFG,
SAPIENZA)	
D2.2: National Workshops on Hydrogeolo	gy. Month 20
	KINDRA Nationa
EFG Member	workshop
Belgo-Luxembourg Union of Geologists	Oct/16
Croatian Geological Society	
Czech Association of Economic Geologists	
Danish Geological Society	27/Oct/16
The Finnish Union of Environmental Professionals	27/Sep/16
France (IHA)	25/Sep/16
Professional Association of German Geoscientists	16/Sep/16
Association of Greek Geologists	26/May/16
Hungarian Geological Society	25/Aug/16
Institute of Geologists of Ireland	
Italian National Council of Geologists	20/Oct/16
Royal Geological and Mining Society of the Netherlands	Nov/16
Polish Association of Minerals Asset Valuators	11-14 Oct-16
Portuguese Association of Geologists	9-10-Nov-16
Slovenian Geological Society	27/Oct/16
Serbian Geological Society Country	28/Jun/16
Official Spanish Association of Professional Geologists	15/Sep/16
Swiss Association of Geologists	
Ukrainian Association of Geologists	

Task 2.3 Data collection and processing (REDIAM, EFG, UM SAPIENZA, GEUS, LPRC) D2.4 EIGR Datasheets, Month 24: 157 EIGR INPUT

Review from REDIAM EFG Member Number of inputs Belgo-Luxembourg Union of Geologists SENT 6 Croatian Geological Society 2 Czech Association of Economic Geologists 49 Danish Geological Society 6 SENT The Finnish Union of Environmental Professionals 5 SENT France (EFG) Professional Association of German Geoscientists SENT 5 Association of Greek Geologists 1 Hungarian Geological Society SENT 5 Institute of Geologists of Ireland 6 SENT Italian National Council of Geologists 5 SENT Royal Geological and Mining Society of the Netherlands 35 Polish Association of Minerals Asset Valuators 5 SENT Portuguese Association of Geologists 5 SENT Slovenian Geological Society 5 SENT Serbian Geological Society Country 5 Official Spanish Association of Professional Geologists Swiss Association of Geologists Ukrainian Association of Geologists Geological Society of London 2 EFG 12 SENT

D2.3 Country Reports, Month 24	.)
EFG Member	KINDRA Intern report
Belgo-Luxembourg Union of Geologists	received
Croatian Geological Society	
Czech Association of Economic Geologists	partly received
Danish Geological Society	
The Finnish Union of Environmental Professionals	received
France (EFG)	
Professional Association of German Geoscientists	partly received
Association of Greek Geologists	received
Hungarian Geological Society	received
Institute of Geologists of Ireland	
Italian National Council of Geologists	received
Royal Geological and Mining Society of the Netherlands	received
Polish Association of Minerals Asset Valuators	
Portuguese Association of Geologists	
Slovenian Geological Society	received
Serbian Geological Society Country	partly received
Official Spanish Association of Professional Geologists	
Swiss Association of Geologists	
Ukrainian Association of Geologists	
Geological Society of London	









Work package number	3 5	Start Da	te or Startin	g Event	24	ŧ.		
Work package title	Research gap	Research gaps and recommendations						
Participant number	1	2	3	4	5	6		
Short name of participant	SAPIENZA	EFG	REDIAM	LPRC	UM	GEUS	Т	
Person/months per participant:	4	5	2	2	4	9	26	













Description and suggested approach -Task 3.2 (2/2)

Water related research papers will be included with focus on: e.g. surface-groundwater interaction; groundwater-ecosystems (terrestial / aquatic); emerging contaminants; climate change; Shalegas exploration. Information is collected across research Projects, recommendations from position papers and from EIP, WssTP, and accounting for implementation of WFD & GWD

Obtained results will be processed to be used at EU level for Directive revisions; CIS Management Basins Plans; Monitoring Procedures (e.g. Blueprint documents)

> KINDRA meeting, Copenhagen June 21-23, 2016

























6. DISCUSSIONS FOLLOWING THE PRESENTATIONS

6.1 Introduction to the KINDRA project: objectives, performed activities, expected results *Marco Petitta, Sapienza*

Rob Ward: EC commissioned papers should be included in the EIGR. Marco Petitta: yes, Sapienza will insert them.

JPE members will be provided by REDIAM with username and password to be able to see EIGR content and to contribute to the population phase, inserting information records.

6.2 WP1: The Classification System HRC-SYS

Klaus Hinsby, GEUS

No questions or comments.

6.3 WP2: The structure of the European Inventory for Groundwater Research EIGR

Clint García-Alibrandi, REDIAM

Upon questions, Clint *García-Alibrandi* replies that REDIAM works on a ICT application to extract the information from the EIGR by statistical and graphical tools. The tools will collect and represent keywords from the thesaurus.

6.4 Discussion with Joint Panel of Experts

Elisabetta Preziosi: How is quality assurance (QA) guaranteed for uploaded data ?

Clint García-Alibrandi : the quality checks prior to validation are actually in course: on the one hand technical (how information has been inserted, what information); on the other hand contents (relevance of the inserted information). As for the how REDIAM does the QA, other partners will assess contents. Also the EFG experts may review what is uploaded. It is agreed that also in the future a quality check on uploads should in some way be organised.

Gesche Grutzmacher: can national languages be used ?

Clint García-Alibrandi : the EIGR interface requires English but the content may be in other languages. Indeed, there is space to include original title apart from an English translation, but the abstract to include should be translated to provide the maximum access. This is not a big burden, because the information is very minimal.

Alecos Demetriades: concerned about what is uploaded: maybe a quality assurance could be required prior to upload, but he is also satisfied with QA afterwards.

Clint García-Alibrandi : Indeed, till now records are publicly accessible only after validation.

Clint García-Alibrandi : Users have a profile on EIGR by which the origin of information can be tracked. During the testing phase information is not visible. We acknowledged that the EIGR needs both English and

American spelling of keywords, e.g. modeling (US) and modelling (UK). But we should always use the English version in our documents.

Teodora Szocs: Can we upload research made before 2000 ? Clint García-Alibrandi : Yes, this is possible.

Rob Ward: is warning that the focus on resources from 2000 onwards means that resources before 2000 will only be sporadic. For the analysis this earlier information may though be useful.

He also points out that it is necessary to be able to select more than one category, e.g. chemistry and biology.

Clint García-Alibrandi : It is possible to assign a record to more than one operational action, research topic or societal challenge. First you assign one of each and than in the "update modality" you can add as many as you like. Than the record will pop-up while searching on any of these categories. He demonstrates how to do this online, and how to add new ones by "updating of categories."

Rob Ward and Alecos Demetriades think this should be called 'Additional categories'. Rob Ward mentions that sometimes chemistry and biology are both applicable, how to prioritize? Elements of subjectivity are hard to avoid. José Martins Carvalho points out the problem to perform statistical evaluations if additional categories are added: watch out that those records inserted on more categories don't increase in weight when counting resources.

Alecos Demetriades: suggests that links to papers should be primarily DOI links because they are the most stable - Rob Ward has mixed feelings because you do not always provide access to the publication. Weblinks to DOI may change but the DOI itself not (DOI's can always be searched for).

Elisabetta Preziosi: the geographical referencing is an important additional value of the EIGR, it should be mandatory.

Marco Petitta: actually it is not a mandatory field, because not every type of resource has a geographical connotation. Participants propose to insert a choice for geographic reference "yes/not"; in case of "yes", it should be mandatory.

Alecos Demetriades: suggests that it should be possible to include geo-referenced records. Clint García-Alibrandi : indeed this is possible.

Gesche Grutzmacher asks how keyword interaction with the HRC-SYS is done. Peter van der Keur explains how keywords have been derived in WP1. Marco Petitta adds that keywords, though presented unlinked in the inventory, are associated to categories according to the EIGR Cube structure, which permits to perform analyses. Elisabetta Preziosi suggests that words in the title should not be used as a keyword.

Alecos Demetriades: KINDRA keywords should be supplied to papers when submitted to journal. You should ask publishers to facilitate this.

Gertruud van Leijen: how to avoid mismatch when for a record keywords are used from a different category than the one associated to the record? Rob Wards agrees and urges to be cautious, e.g. whether keywords belong to chemistry or biology.

Peter van der Keur: keywords may apply to more categories and this could be adjusted in the model. So the inventory will offer a tool to verify the validity and to improve and further develop the model, while the model will help to analyse the data gathered in the EIGR.

Elisabetta Preziosi: who is the owner of uploaded records ?

Clint García-Alibrandi : the expert is not owner but responsible for uploading the right records and maintaining the data. In principle an author should ask the person that uploaded the data to update or correct them. But the intention is that in the future authors will insert their own publications and resources.

6.5 WP2 Data collection - role of EFG national experts and ongoing activities

Isabel Fernandez, EFG

Due to formal cooperation issues between EU-Switzerland, the Swiss Third Party still participates but with a subsidy from the Swiss government. This subsidy is though still not formalised, causing a delay in their activities. So still 20 countries participate and upload data to EIGR.

Considering the inactivity so far of the British Third Party, Rob Ward mentions that he will take care that UK uploads the requested records.

Alecos Demetriades: would like to get more actively involved in the KINDRA process e.g. by video conferences or skype.

How to ensure that the KINDRA EIGR stays alive after the project is completed ? This is under the partnership's study.

Alecos Demetriades: will check involved institutions in Greece responsible for data upload, as some work with surface water only.

6.6 WP2 Data processing: indicators and tools to be adopted for WP3 & WP3 Research gaps and recommendations - objectives for the next year

Marco Petitta, Sapienza & Peter van der Keur, GEUS

Peter van der Keur and Marco Petitta introduce the objectives of WP3 and the forthcoming work on data processing, indicators and tools to be adopted for WP3 gap and trend analysis.

Main indicators are the nodes in the 3-D cube EIGR system. It may be research (Cat 1& 2) or knowledge (Cat 3& 4). Also geographic locations across EU. In EIGR the Ecology – Groundwater link may be missing.

Gesche Grutzmacher: you may classify your nodes in the sense of Water Framework Directive requirements. Then you can measure how much (and what) is being done on these nodes, outlining the gaps. You can assess per important node what the TRL level is etc. . Thus, we should remind people to include TRL and patents if possible.

Rob Ward: the amount of data (records) in nodes are not necessarily related to gaps. The system is biased in how it is designed. Perhaps we need significance levels. A reality check is needed for checking the pretended

relevance of records for policy papers, e.g. WFD & GWD. The data should be put in a context of understanding and interpretation, based on our expertise.

Marco Petitta acknowledges the bias problem and thinks we should include this as a project RISK in the reporting. A large amount of indicators can help to face them.

Klaus Hinsby and Peter van der Keur: we are going to involve a librarian from Univ. Copenhagen for data analyses and presentation. A follow up on this will be provided as soon as possible. He/She could assist in how to extract information from various databases (Scopus, Web of Science).

Rob Ward: we are all experts so our knowledge is important for evaluating and validating the data. Rob Ward suggests that we use a similar concept as the TRL for classifying the research as different levels of maturity, with threshold values (BRIDGE project could be an example) to identify gaps.

Teodora Szocs: different relevance may vary for different regions. Clint García-Alibrandi: it can only be countered by a validation system.

Heidi Barlebo: there's a time perspective that affects what is necessary research at a given time, eg. the effect of the WFD on research.

Elisabetta Preziosi: Can we specify search periods in EIGR and analyse trends? Clint García-Alibrandi: Yes, this is possible.

Alecos Demetriades: What about a questionnaire to the EFG experts etc. on what are the gaps from their perspective? This could offer much additional information for interpretation of data. General agreement.

6.7 WP4 Dissemination and communication: achieved results and next steps

Adrienn Cseko, LPRC

The KINDRA website counted so far ca. 4500 visits mainly from Europe.

JPE members provide several suggestions for communication of KINDRA: to use the World Water Day (22 March), universities, water works and their national associations, Researchers' Nights, European Schoolnet, NGO's.

Alecos Demetriades will send links for Greece to Adrienn Cseko.

Gesche Grutzmacher: Universities may invite and organize thematic events around groundwater.

Many Experts agreed to involve waterworks companies at national scale for dissemination.

Heidi Barlebo: biologists are not much reached by hydrogeologist channels, though they are much in the field and could offer big collaborations. To reach biologists and ecologists a possibility would be to organise workshop between WGG and Ecostat. Gesche Grutzmacher adds that also environmental NGOs may be good channels to reach them.

Round Table on next steps

Chair: Marco Petitta, Sapienza

6.8 How to populate the EIGR

Validation issues

Validation of inserted records remains an important issue.

Alecos Demetriades suggest that we have an additional person from each country to validate the data uploaded by the EFG expert.

Isabel Fernandez: this is not possible within the existing budget. She suggests that the JPE helps testing parts of EIGR data from their own country.

Marco Petitta asks the JPE to provide some revisions (about 3 to 5) of the inserted records by the National Experts info the EIGR.

Agreed. Clint García-Alibrandi will select and send to the JPE the related list.

Alecos Demetriades states that the PROMINE database has so many errors that he does not use it. He is afraid that the same could be the case for EIGR, so we should have a sound system of validation. Marco Petitta: There are not sufficient resources to do that in KINDRA. Moreover, content evaluation is out of the scope of the project, in which validation procedures are not foreseen. Lastly, for publications that are peer reviewed it would be not appropriate. We are able to validate if what is inserted is pertinent or not and if it is inserted correctly, so allows us to use the analyses tools.

Alecos Demetriades proposes at the end of the meeting a peer review solution for zero costs: anybody who uploads information, should indicate a "validator", who then validates the insertion. At that point, the administrator should only check the correctness of compilation. This modality will be assessed.

Elisabetta Preziosi proposes to establish validation criteria, that could be:

- * basic relevance (not out of scope)
- * minimum required information correctly inserted

Ex-ante quality assurance and other measures to counter bias

Given the impossibilities to perform complete validation on all inserted records, the discussion focuses on how to maximise the quality of data input.

The project does not foresee a minimum number of uploads per country, but requires a total between 1.000-2.000 records. In this light, the partners and the JPE agree that the expected records to be uploaded from each National Experts is ranging from 50 to 100.

Gesche Grutzmacher asks how the experts are expected to choose among the most relevant categories and keywords. What are the criteria ?

Eva Hartai explains that national experts have been provided with guidelines that invite to upload most relevant and most important documents. Marco Petitta adds that we need to trust the experts.

Peter van der Keur: we should support the experts in deciding on what is the most important to upload and to which category it belongs (Cat 1-4). Here we should take point of departure in the Cat 1-4 as defined in the HRC-SYS (D1.2). Then Cat 1 would be preferred if available, then Cat 2 etc. However records which are expected to be especially relevant for EFG experts, including reports etc. should be highlighted. Perhaps a weighing system could be suitable.

Rob Ward: it's complex. Currently we speculate on the quality, but resources are limited and we should just wait a little bit and discuss when more data are uploaded. JPE can check part of the uploaded data, but unconscious bias cannot be avoided completely and we should acknowledge that also in the analyses of the data. Maybe it will become self-regulating when it's opened up to more people that may balance the contents better. You can perform semi-quantitative analysis of the data for a start. The Commission also has to take responsibility and help to ensure that EIGR is used.

Gesche Grutzmacher: the added value of the project is not just stick to the statistics. It is important to use expert knowledge in the evaluation and validation of the data which explains why data is included or why not. The expert knowledge should allow to recognise the bias and assess the consequences and correction mechanisms.

Teodora Szocs: Go back to the national experts after evaluating the initial input and ask them to re-evaluate their own data again based on the input from others. Isabel Fernandez is positive about this suggestion, but she agrees with Klaus Hinsby that there are really limited resources for validation.

Eva Hartai: the country reports also will be useful; we can prepare a questionnaire for National Experts for highlighting their work and national background in the groundwater field.

6.9 Identification of gaps for policy implementation

Marco Petitta: the database is developed for gap analysis and general consultation - IAH Europe would be a good platform to use for extension of the platform.

Alecos Demetriades: are patents really necessary? Marco Petitta and Elisabetta Preziosi: yes, there's focus on these at policy level.

Marco Petitta invites the JPE to think about criteria and indicators for evaluating gaps and trends. JPE considers important aspects:

- timeline (more research on a topic today with respect to past?)

- geographical location of the document.

It is acknowledged that TRL should be compiled only when relevant, i.e. when new technologies, approaches/tools are at stake.

Gesche Grutzmacher: could we introduce a similar scale for other knowledge and its innovative value for policies and directives?

Rob Ward: maybe we could develop a similar "DRL" (Directive Readiness Level or maybe Policy Readiness Level) a directive readiness level maybe with less levels (4):

Suggestion:

Introduction of a new indicator related to Policy Readiness Level: preliminary suggestions:

5) Ready for implementation in WFD / River Basin Management Plans (RBMPs) and GWD implementation

- 4) Guidance for application developed
- 3) Technology for demonstration developed
- 3) Relevant for evaluation of the WFD in 2019
- 2) Research to prove feasibility
- 1) Concepts described

Gesche Grutzmacher: it is also relevant to develop innovative approaches which make European groundwater research and water legislation visible globally Rob Ward: remember that one important goal is recommendations for the implementation of the WFD

Elisabetta Preziosi: Maybe we should have mentioned INSPIRE directive in D1.7? Clint: there is reference to it, and indeed to maintain the interoperability of the system causes constraints to is features.

A survey for national experts at the end of their insertion work would be useful to reveal unexpected results.

6.10 Contacts and links with other projects, common dissemination strategies

On invitation of Marco Petitta a number of projects are mentioned:

EGDI, ERA-NET / GeoERA, SubSol, SOVAM, MARSOL, MARS, Soils2Sea, demeaux, aquanis.

EGDI / GeoERA offer a possibility for continuing EIGR after project end, that will be assessed in forthcoming months, so to provide for sustainability of project outcomes after its closure.

Other issues related to dissemination have yet been discussed in the morning session.

6.11 Wrap-up and conclusions

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Main conclusions of the workshop, to be taken-up in forthcoming KINDRA activities, are the following:

- The system presents the following bias that could jeopardise analyses:
 - selection of sources to insert: insufficient background versatility of experts inserting information
 - number of sources inserted per country
 - o completeness of information inserted
 - o correctness of information inserted

They should be considered as risks in the project, major awareness is required and mechanisms should be handled to tackle them.

- Few data on a node in the 3-D classification system in the inventory doesn't necessarily indicate a gap. The reason could be that limited information associated to a node is due to less need for information for this combination. Insufficient knowledge by EFG experts uploading information for a specific node can also cause it, i.e. research for a specific node exists, but EFG experts are not aware of it or undervalue relevance (knowledge bias) The data should be put in a context of understanding and interpretation, based on our expertise, otherwise outcomes may be biased. A large amount of indicators can help, a questionnaire distributed to EFG experts can also give much additional information for interpretation of data, and also the country reports provide support to this.
- Quality assurance of the EIGR: It is agreed that also in the future a quality check on uploads should in some way be organised. To face the burden of availability of resources to do so, it was proposed to introduce peer validation, obliging anybody who uploads information to indicate a "validator", who then validates the insertion. At that point, the administrator should only provide validation criteria and check the correctness of compilation. This modality will be assessed.
- To support assessment of policy relevance of available knowledge and result outcomes, a new scale is proposed, similar to the TRL levels for technological innovations: Policy Readiness Level. The discussed 5 levels have been reduced to 4, that will be added as indicators to the EIGR:
 - 1. Not relevant for EU policy implementation
 - 2. Potentially relevant for EU policy but additional research needed
 - 3. Relevant for implementation of EU policy, basic research conducted but guidance need to be developed
 - 4. Guidance available: ready for implementation of EU policy (e.g. in river basin management plans)
- Acknowledged the importance of geographical references, the EIGR will be extended with an obligation to provide Geographical Reference if available and relevant (*If there is Geo Ref Info, please include, if not, mark "NO GEO REF INFO AVAILABLE"*)
- Guidelines to experts will be enhanced with a checklist per kind of data source (projects, reports, publications ...) and some recommendations, to better assure the quality of records.

Marco Petitta thanks the JPE members for their important contributions and recaps that they will receive username and password to login to the EIGR and a list with 5 records to validate.

The next meeting with the JPE is foreseen in June 2017 and will probably take place in La Palma.

7. PICTURES OF THE WORKSHOP

A selection of pictures is hereafter reproduced to give an impression of the workshop and its participants.



KINDRA D4.9_vD Second Workshop with the Joint Panel of Experts

Meeting room for JPE meeting at GEUS venue in Copenhagen. Clockwise: Klaus Hinsby, Mercedes Garcia Padilla, Carlos Martínez Navarrete, Viktoria Mikita, Gertruud van Leijen, Elisabetta Preziosi, Gesche Grutzmacher, Rob Ward, Alecos Demetriades, Isabel Fernandez.



Clint García-Alibrandi (REDIAM) presents the design and implementation of EIGR.



KINDRA D4.9_vD Second Workshop with the Joint Panel of Experts

Discussion with JPE members. Clockwise: Mercedes Garcia Padilla, Carlos Martínez Navarrete, Viktoria Mikita, Gertruud van Leijen, Elisabetta Preziosi, Gesche Grutzmacher, Rob Ward, Alecos Demetriades, Teodora Szocs, Marco Petitta, Éva Hartai



Clockwise:

Klaus Hinsby, Peter van der Keur Mercedes Garcia Padilla, Carlos Martínez Navarrete, Viktoria Mikita, Gertruud van Leijen, Elisabetta Preziosi, Gesche Grutzmacher, Rob Ward, Alecos Demetriades, Heidi Barlebo, José Martins Carvalho, Teodora Szocs, Marco Petitta, Éva Hartai, Isabel Fernandez.