Establishing the European Geological Surveys Research Area to deliver a Geological Service for Europe

Technical review report for project TACTIC

This report is part of a project that has received funding by the European Union's Horizon 2020 research and innovation programme under grant agreement number 731166.

INTRODUCTION

Technical review report is part of GeoERA's Monitoring and evaluation process for co-funded projects (*hereinafter: project*). The aim of a technical review is to assess the work carried out under the project over a certain period and provide recommendations. Such technical review evaluates the project reports and deliverables, the proper use of resources, the management of the project and the expected impact.

Technical review report consists of four sections, each representing one level of monitoring and/or evaluation of the project:

Level	Monitor / Reviewer	Input	Aim
1 – Monitoring of progress indicators	Monitoring and reporting officer (GeoZS)	MPPR* FPPR**	Monitoring of the effectiveness of implementation of selected projects with respect to finance, time and administration.
2 – Scientific review	Reviewers (GeoZS)	Submitted deliverables MPPR FPPR	Quality review of the deliverables and review of achieving scientific and professional goals.
3 – Review of the theme progress	Theme coordinators	MPPR FPPR	Review of achieving theme objectives.
4 – GeoERA Progress evaluation	Stakeholder Council member(s)	Sections 1 and 2 of this report Review meetings	Overall project progress and general recommendations.

*MPPR = Midterm Project Progress Report (see PI doc no 2)
**FPPR = Final Project Progress Report (see PI doc no 2)

Monitoring and evaluation process:

M0 = End of reporting period
M1 = Submitted (Final) Project progress Report (MPPR / FPPR)
M2 = 1 – Monitoring & 2 – Evaluation
M3 = 3 – Evaluation of the theme progress
M3 = (Final) Review Meeting & 4 – Progress evaluation

Each project will be reviewed twice: for first project period M1-M18 – Technical review report, and second project period M19-M36 – Final review report.
Technical review report is based on Horizon 2020 templates but adopted to GeoERA needs. Technical reviews of projects shall be carried out on a confidential basis.

GENERAL INFORMATION

ERA-NET Cofund Grant Agreement:	731166
ERA-NET Cofund acronym:	GeoERA
Call identifier:	H2020-LCE-2016-2017/H2020-LCE-2016-ERA
Project full title:	Tools for Assessment of ClimaTe change ImpacT on Groundwater and Adaptation Strategies
Project acronym:	TACTIC
Project reference number:	GeoE.171.008
Project topic:	Groundwater
Project specific topic:	GW2-Tools for climate change impact assessment and adaptation
Lead partner:	GEUS Geological Survey of Denmark and Greenland
Project website:	http://geoera.eu/projects/tactic/

☒ Technical review report
☐ Final review report

Period covered	01/07/2018 – 31/12/2019
Review meeting date	18.02.2020

Contributor:	Role:	Approved on:
Barbara Simić	Monitoring and reporting officer	01.03.2020
Maja Ilić	Monitoring and reporting officer	02.03.2020
Mateja Jemec Auflič	Scientific reviewer	02.03.2020
Ela Šegina	Scientific reviewer	02.03.2020
Jasna Šinigoj	Scientific reviewer	11.03.2020
Matija Krivic	Scientific reviewer	10.03.2020
Klaus Hinsby	Theme coordinator	01.03.2020
Dominique Darmendrail	Stakeholder Council member	30.03.2020

1 LEVEL 1 – MONITORING OF PROGRESS INDICATORS

In this section the project is monitored "remotely" on the basis of the respective reports. This part is filled in by Monitoring and reporting officer with aim to monitor the effectiveness of implementation of the selected projects with respect to finance, time and administration, based on submited MPPR and FPPR.

	Yes	Partially (comment needed)	No
PROJECT MANAGEMENT			
Has the MPPR / FPPR report been submitted on time?	☒		☐
Have there been any changes in project partnership?	☐		☒
Has the project management been performed as required?	☒		☐
Has the collaboration between partners been effective?	☒		☐
Do you identify evidence of underperforming partners, lack of commitment or change of interest of any partners?	☐ (see comment)		☒
DELIVERABLES and MILESTONES			
Have the planned deliverables for the period been submitted on time according to timeline in Project Agreement?	☐	See comment no.1	☒
Have the planned deliverables for the period been completed (from MPPR / FPPR, sheet 4)	☒		☐
Have any changes to deliverables occurred (type/ dissemination level)? (from MPPR / FPPR, sheet 4 and 5)	☒	See comment no.2	☐
Have planned milestones been achieved for the reporting period? (from MPPR / FPPR, sheet 4)	☒		☐
Have the project partnership identify any difficulties achieving any of the deliverables / milestones?	☐		☒
DEVIATIONS (from MPPR / FPPR, sheet 5)			
Has the project partnership identify any deviations that will not affect projects outputs?	☒		☐
Have any deviations occur on the project, with impact on project outputs?	☐		☒
In case of deviations, have the project adopted corrective measures?	☒		☐
DISSEMINATION, COMMUNICATION			
Has the project adopted its dissemination plan?	☒		☐

Have the planned dissemination activities been completed for the reporting period? (from MPPR / FPPR, sheet 6)	☒		☐
Have the partners' disseminated project results and information adequately?	☒		☐
Is the project following dissemination plan?	☒		☐
Is the project interacting in a satisfactory manner with other GeoERA projects?	☒		☐
Is the project interacting in a satisfactory manner with national/international bodies?	☒		☐

FINANCE			
To the best of your estimate, have the resources used been utilised for achieving the project? (according to MPPR / FPPR, sheet 9)	☒		☐
To the best of your estimate, have the resources used been in a manner consisted with the principle of economy, efficiency and effectiveness? *	☒		☐
Are there any major deviations in the budget consumptions from the financial plan? (zero consumption in M18; deviation from plan exceeding 20% in M36)	☐		☒
Are there any major deviations in the Person - Months consumptions from the plan? (zero consumption in M18; deviation from plan exceeding 20% in M36)	☐		☒
Are any budget modifications for the project needed? (from MPPR / FPPR, sheet 5)	☐		☒

***The principles of economy, efficiency and effectiveness**: refers to the standard of "good housekeeping" in spending public money effectively. Economy can be understood as minimising the costs of resources used for an activity (input), having regard to the appropriate quality and can be linked to efficiency, which is the relationship between the outputs and the resources used to produce them. Effectiveness is concerned with measuring the extent to which the objectives have been achieved and the relationship between the intended impact and the actual impact of an activity. Cost effectiveness means the relationship between project costs and outcomes, expressed as costs per unit of outcome achieved.

Comments (highlighting the project progress) / deviations / recommendations:

Comment no.1: In the first reporting period 13 deliverables were due:
11 deliverables were submitted in time
2 deliverables were submitted with eligible delay (amendment 1)
Comment no.2: Changes to deliverables:
D2.3: postponed from M10 → M12
D1.1: postponed from M11 → M16
The changes have no impact on the project outputs.

TACTIC project aims to improve the support to EU decision and policy making by contributing to the development of coherent and transparent assessments of climate

change impacts on groundwater and surface water using common and integrated approaches, methodologies and tools consistent across different European countries. In the first reporting period the project achieved all its goals with minor deviations in the deliverable dates. Both delays were recognized and communicated in time and corrective measures were adopted. The delays have no impact on expected project outputs.
The communication and dissemination plan have been adopted, although no specific indicators were set, so a comparison between planned and achieved numbers is not possible. The partnership estimates they have reached a little over 8.000 people through various online media and publications, which is an average reach compared to other GeoERA projects. Cooperation with other GeoERA projects is adequate, mainly with GIP-P, HOVER and RESOURCE.
Overall financial consumption at the end of first reporting period is 40 %, which is a bit low. According to the project plan, the majority of activities will be done in the second reporting period, consequently the financial consumption will increase.

No challenges in achieving project outcomes are recognized, the project lead provides good support to partners with implementation of project activities.

Recommendation to the project is to keep track of the communication and dissemination activities and try to to count or estimate the number of people reached with these activities. The same is applicable for the meetings.

Overall assessment of the project:

☐ 5 - **Overachiever** (the project has achieved all objectives and goals for the period and has even exceeded expectations)

☒ 4 - **Excellent progress** (the project has fully achieved its objectives and goals for the period)

☐ 3 - **Good progress** (the project has achieved most of its objectives and goals for the period with relatively minor deviations)

☐ 2 - **Acceptable progress** (the project has achieved some of its objectives; however corrective action will be required)

☐ 1 - **Unsatisfactory progress** (the project has failed to achieve critical objectives and/or is not at all on schedule)

Summary of dissemination activities (detailed activities are annexed to this report):

Activity	Target audience	Number of people reached
Publications	Non-EU institution	>100
Publications	Scientific community	>1000
Publications	General public	
Events	Policy makers	>300
Events	Non-EU institutuin	>300
Events	General public	>100
Meetings	Non-EU institution	>100
Meetings	EU institution	>100
Media	General public	>6100
		>8.100

Are the dissemination activities adequate? (link to GeoERA WP5)

☐ 5 - **Overachieved** (the projects dissemination activities have exceeded expectations)

☒ 4 - **Excellent** (the projects dissemination activities have fully achieved its expectations)

☐ 3 - **Good** (the projects dissemination activities are adequate; however, some additional activities are needed)

☐ 2 - **Acceptable** (the projects dissemination activities need corrective actions; additional activities are needed)

☐ 1 - **Unsatisfactory** (the project has failed to disseminate)

Cummulative financial statement:

	Person months	Total eligible costs	Reimbursement rate	GeoERA contribution	In-kind contribution
Plan	255,6	1.799.979	29,7%	534.593	1.265.386
1st period consumption	104,86	712.482,95	29,7%	210.781	501.702
2nd period consumtion					

2 LEVEL 2 – SCIENTIFIC REVIEW

In this section the project is reviewed ”remotely” on the basis of the respective reports. This part is filled in by reviewer with aim to review the quality of the deliverables and review of achieving scientific and professional goals. Scientific review is based on submitted deliverables and reported Impact statement in MPPR/FPPR.

Impact statement (from MPPR / FPPR, sheet 8):

The expected impact of TACTIC is first and foremost to provide: “Improved support to EU decision and policy making by contributing to the development of coherent and transparent assessments of climate change impacts on groundwater and surface water using common and integrated approaches, methodologies and tools consistent across the different European countries”.
To achieve this, TACTIC contributes to the population of the common GeoERA Information Platform (GIP), whereby data and results from the project are made findable, accessible, interoperable and reusable data according to the “FAIR” principles. Results will include standard results from assessments e.g. in the form of tables of hydraulic parameters, maps, cross sections and model results. In addition to this, results include a TACTIC toolbox with tools relevant for climate change impact assessments and evaluate effect of adaptation strategies as well as a guideline for undertaking the assessments. Through GIP data and results from the project are made easily accessible primarily for stakeholders involved in the development of sustainable management of Europe’s water resources and climate change adaptation. Hence, it will provide data for the development of on-top services by e.g. private consulting companies contracted by authorities to develop services at local to Pan-European scale, and it will promote the development of new monitoring instruments and networks required for cost-efficient monitoring and assessment of the chemical and quantitative status of the water resources according to the Water Framework and Groundwater directives and the Blueprint to Safeguard Europe’s Water Resources.
In addition to the impact to the external stakeholders and future users, an important impact for TACTIC is to advance the climate change impact assessments and adaptations in the individual GSOs and harmonise the assessments among the GSOs. This is achieved through the development of a TACTIC Toolbox, common protocols and guidelines, as well as direct contacts through physical project and online meetings, with experience sharing, discussion of progress and demonstration of tools and approaches.
The impacts to the external community can only be realised at the end of the project, were project products have been finalised and made accessible in the information platform. The impact among the TACTIC partners are, on the contrary, experienced during the project. Through online webinars various tools have been demonstrated and taken up by TACTIC partners with no previous experience in climate change impact assessments, and 11 partners are working with multiple tools in their pilots. Common climate change scenarios have further been developed making it possible for all TACTIC partners to estimate effect of future climate changes. The project has

thus already had a significant impact in advancing and harmonising the assessments among the partners.

Expected impact (from Project Agreement):

The expected impact of TACTIC is first and foremost to provide: “Improved support to EU decision and policy making by contributing to the development of coherent and transparent assessments of climate change impacts on groundwater and surface water using common and integrated approaches, methodologies and tools consistent across the different European countries”, as required in the GeoERA call text for the groundwater specific research topic “Tools for climate change impact assessment and adaptation”. TACTIC will do so by compiling and harmonising European subsurface databases on the common GeoERA Information Platform providing findable, accessible, interoperable and reusable data according to the “FAIR” principles e.g. in the form of tables of hydraulic parameters, maps, cross sections and model results in collaboration with the GeoERA Information Platform and the other GeoERA themes. These data are required for scientifically sound climate change impact assessments, decision and policy making, and the developed databases and maps will demonstrate where e.g. data for sound assessments are missing in order to be able to make projections with an acceptable uncertainty. The improved decision support data and tools will be easily accessible via the GeoERA information Platform primarily for stakeholders involved in the development of sustainable management of Europe’s water resources and climate change adaptation. Hence, it will provide data for the development of on-top services by e.g. private consulting companies contracted by authorities to develop services at local to Pan-European scale, and it will promote the development of new monitoring instruments and networks required for cost-efficient monitoring and assessment of the chemical and quantitative status of the water resources according to the Water Framework and Groundwater directives and the Blueprint to Safeguard Europe’s Water Resources. In addition to the expected impacts mentioned in the call text for the specific research topic covered by this proposal, TACTIC will contribute to support, provide data and improve the understanding of the following important issues related to climate change impacts on the status of European water resources and hence sound decision making, sustainable management and adaptation in relation to: • Potential consequences, hazards (e.g. land subsidence) of groundwater abstraction and interactions with other subsurface activities as well as climate change, droughts and floods; • Open access to modelling results enabling private companies and/or research institutions to develop new groundwater services on top of the integrated climate, groundwater-surface water models and results e.g. in public-private partnerships and competitive and collaborative environments; • Improved role of Europe in developing innovative solutions and products for sustainable water management, conjunctive use, adaptation strategies and protection of freshwater resources, globally; • Improved access to downloadable hydraulic parameters of main European aquifers and

aquitards (or groundwater bodies) needed for e.g. model development; • Improved tools for assessment of groundwater quantitative and chemical status based on good status objectives of groundwater dependent terrestrial and associated aquatic ecosystems according to EU directives and guidance; • State-of-the-art tools for decision support that allow to elaborate the cost-effectiveness of measures and to support sustainable decision making in relation to the water-food-energy nexus.

Evaluation of deliverables

Deliverables list status			
No.	Title	Status (Approve/ Reject)	Comments
D1.1	Summary report for the second TACTIC Advisory Board meeting	Approved	/
D1.5	Cumulative expenditure report 2018	Approved	/
D2.1	Data management plan	Approved	See below
This deliverable provides a first version of the TACTIC Data Management Plan. It is structured according to the guidelines of the Overall GEOERA Data Management following Horizon 2020 FAIR Data and Management Plan. Since GIP-P did not yet provide recommendations and EGDI will furtherly develop, this report could be updated in the future.			
D2.2	Definition of requirements to GIP following recommendations from the GIP project	Approved	/
D2.3	Questionnaire to survey GSOs on data and tools	Approved	/
D2.4	Protocol for best practice descriptions of tools	Approved	/
D2.6	Communication, dissemination and exploitation plan	Approved	/
D3.1	Inventory on data and results for ground water surface water	Approved	/
D4.1	Inventory on data and results for recharge and groundwater vulnerability	Approved	/
D5.1	Inventory on data and results for sea/salt water intrusion	Approved	/
D5.2	Harmonised method for assessing status and vulnerability	Rejected	No deliverable; the article is not available for review
D6.1	Inventory on data and results for adaptation	Approved	
D6.2	Scenarios development	Approved	

Has the quality as a whole been achieved according the objectives? Has the project as a whole been making satisfactory progress?

☐ 5 - **Overachiever** (the project has achieved all objectives and goals for the period and has even exceeded expectations)

☒ 4 - **Excellent progress** (the project has fully achieved its objectives and goals for the period)

☐ 3 - **Good progress** (the project has achieved most of its objectives and goals for the period with relatively minor deviations)

☐ 2 - **Acceptable progress** (the project has achieved some of its objectives; however corrective action will be required)

☐ 1 - **Unsatisfactory progress** (the project has failed to achieve critical objectives and/or is not at all on schedule)

Comments (highlighting the project progress) / deviations / recommendations:

The project is following timeline and is progressing as planned.
In Work Package 3, the D3.1 should also contain the section of climate change influence on the hydraulic parameters such as cross-sectional area of flow, wetted perimeter, hydraulic radius, river-bottom slope, flow velocity (direct or indirect impact) based on which the climate change impact assessments, decision and policy making, databases and maps will be demonstrated.
Within Work Package 4, the assessing groundwater recharge will be also delineated by using satellite data for filling-up the gaps in areas of unknown recharge and cross-checked on a sample area for estimation of the reliability of the Pan-European recharge map.
Within Work Package 5 the deliverable number 5.2 was submitted as an article with no access (publishing rights etc.) and was not available for the review. Also, the title of the article does not match the deliverable's title. As discussed at the review meeting, the project should either amend the deliverable deadline and submit later; write a different deliverable, that is not an article, or; attach the whole article.

3 LEVEL 3 – REVIEW OF THE THEME PROGRESS

In this section the project is reviewed ”remotely” on the basis of the respective reports. This part is filled in by Theme coordinator with aim to review the achieved scientific goals in accordance with theme objectives, on the basis of Sheet 3 in MPPR / FPPR – Project contribution to GeoERA project.

Project contribution to GeoERA project (from MPPR / FPPR, sheet 3):

TACTIC contributes to GeoERA by considering most of the following deliverables requested by the original LCE-2016 call in Horizon 2020 for an ERA-NET on Applied Geoscience and it makes the results from the assessments in the pilots available at the GeoERA Information Platform using the FAIR data principles – according to the original call text the deliverables of the groundwater projects shall include: Improved tools and models for subsurface characterisation, risk assessment and assessment of the impact of climate change (TACTIC), human activities and other uses of the subsurface on groundwater resources and dependent terrestrial ecosystems (HOVER); 3D models of groundwater resources (HOVER, RESOURCE, TACTIC and VoGERA); Temporal and spatial groundwater pollution trends including diffuse pollution of especially nutrients (N, P) and pesticides from agriculture, trends in nutrient loadings to ecosystems, and fate, behaviour and degradation of emerging pollutants from industry, households and agriculture, and the resulting impact on dependent terrestrial ecosystems (HOVER); Groundwater and surface water flooding risks (TACTIC); Saltwater / seawater intrusion and the resulting impact on dependent terrestrial ecosystems; (TACTIC) Groundwater abstraction needs for water supply and irrigation and the resulting impact on dependent terrestrial ecosystems (including soils), surface waters, and groundwater associated aquatic ecosystems, the groundwater ecosystem itself, and the built environment (e.g. damage of infrastructure due to land subsidence). (TACTIC).

Theme objectives:

To provide groundwater data, information and decision support tools for the long-term protection, sustainable management and improvement in groundwater resources across Europe, taking into account societal challenges and EU policies, based on innovative methodologies to tackle diversity of hydrogeological settings and scales (regional to pan-European). Jointly developing harmonized and effective tools and methodologies for monitoring, modelling, data management and visualization

will improve the understanding of groundwater systems at regional to pan-European scales.

Cross-border, regional and pan-European examples of the most important and widely applicable data will be showcased on the Geoscience Information Platform, and may be visualized and downloaded together with e.g. data on competing interests for geo-energy and raw materials in a specific region. Importantly, GeoERA
provides the possibility of compiling and analysing geo-energy, groundwater and raw materials data in advanced 3D geological and geophysical modelling, interpretation and visualisation software. The ambition is to provide data and tools for the development of a globally leading groundwater information platform

Has the project as a whole achieved the objectives and expected impact of the theme?

☒ 5 - **Overachiever** (the project has achieved greater impact on project theme and/or other themes than expected)

☐ 4 - **Excellent progress** (the project has fully achieved its objectives and goals towards the theme as expected)

☐ 3 - **Good progress** (the project has achieved most of its impact towards the theme for the period with relatively minor deviations)

☐ 2 - **Acceptable progress** (the project has minor impact; corrective action will be required)

☐ 1 - **Unsatisfactory progress** (the project has failed to achieve critical objectives and/or is not at all on schedule and/or has no impact on the theme; corrective actions are required)

Comments / deviations / recommendations:

The project has already published three scientific papers and submitted four abstracts to EGU 2020, which were all accepted. Besides that additional funding from some member states enabled collection of additional data and development of additional services for and by the GeoERA information platform including visualisation of near real-time sensor data of water levels and salinity / conductivity, which may be used by all member states for assessment of the quantitative and chemical status of European groundwater according to EU legislation primarily the Water Framework, drinking water and groundwater directives . Furthermore, a preliminary example of a 3D model of a coastal aquifer affected by salt water intrusion in NE Italy is already visualised interactively on EGDI. This is the first 3D model from a GeoERA project, which has been visualised on the information platform / EGDI.

The water level and salinity sensors are related primarily to activities in TACTIC WP4, 5 and 6, but the data are of relevance to all GeoERA groundwater projects. As a related

activity TACTIC established collaboration on the analysis of time series with University of Gothenburg in Sweden through one of the members of the advisory board (Prof. Roland Barthel).

The visualizations of 3D models is of relevance to all GeoERA projects.

Not all partners are pro-active, but the core team members work very well and efficiently together and ensure good progress across Europe.

Generally, the project progresses as planned and no critical delays are expected.

4 LEVEL 4 – GEOERA PROGRESS EVALUATION

In this section the project is reviewed on the Review meetings, where projects present their overall progress and achievements. This section relates to particular project, broader impact of GeoERA as a whole on policies will be covered at the Final Review meeting with questionnaire and interview with Evaluator.

Based on technical review summaries provided by Sections 1 – 3 of this report, and project presentation on the (Final) Review meeting:

Has the project as a whole been making satisfactory progress according to your own understanding and expectations of the GeoERA project?

☐ 5 - **Overachiever** (the project has exceeded expectations)
☒ 4 - **Excellent progress** (as expected)
☒ 3 - **Good progress** (minor recommendations given below)
☐ 2 - **Acceptable progress** (below expectations; minor corrective action will be required)
☐ 1 - **Unsatisfactory progress** (the project has failed; corrective actions are required)

Overall comments for the project (overall recommendations, modifications, corrective actions, or re-tuning the objectives to optimize the impact or keep up with the State of the Art, re-focusing, or a simple praise)

The project addresses an important issue, the Climate Change impacts on groundwater and surface water resources, by the development of common and harmonized databases, methodologies and tools across European countries. It also relies on numerous case studies (41, around EU, with different scales), which should allow to cover many European Contexts.

At mid-term review, TACTIC achieved most of the milestones and published planned deliverables. The first tools have also been assessed by external partners (Univ. Oslo, Gothenburg). Enlarging this assessment to other types of stakeholders could be an added value, by bringing other points of view, for example on scenarios to consider.

The contribution of “small partners” will therefore be crucial for reaching this Pan-European dimension as announced in the project Description of Action. The coordinator should pay attention to these contributions as it’s of major importance for achieving all objectives of TACTIC as planned in the Description of Action.

The link with HOVER should be highlighted / strengthened on some actions (e.g. data, monitoring instruments) to ensure a broader interoperability of the toolkit. In the

same vein, the project should bridge with some of the actions planned by ESA and Copernicus.

The Communication – Dissemination – Exploitation Plan (specific deliverable) should be further developed in particular on the exploitation part:

- It partly relies on a repository developed by an EU funded project which is now closed. Therefore its sustainability is not ensured.
- And mainly on the EGDI exploitation plan, which is in fact quite limited.
- as the project intends to provide access to data (climate, soil characteristics, water uses, etc.), the question of the ownership of the data should be addressed properly.

Annex 1: Review meeting list of participants

Name	Role	Organisation
Tessa Witteman	GeoERA coordinator	Netherlands Organisation for Applied Scientific Research
Barbara Simić	Monitoring and Reporting Officer	Geological Survey of Slovenia
Jasna Šinigoj	Scientific Reviewer	Geological Survey of Slovenia
Mateja Jemec Auflič	Scientific Reviewer	Geological Survey of Slovenia
Ela Šegina	Scientific Reviewer	Geological Survey of Slovenia
Klaus Hinsby	Groundwater Theme coordinator	Geological Survey of Denmark and Greenland
Dominique Darmendrail	Stakeholder council member	Water JPI
Anker Lajer Højberg	Project manager	Geological Survey of Denmark and Greenland
Ida Karlsson Seidenfaden	Project member	Geological Survey of Denmark and Greenland
Jacob Kidmose	Project member	Geological Survey of Denmark and Greenland
Hélène Bessiere	Project member	The French Geological Survey
Majdi Mansour	Project member	British Geological Survey
David Pulido-Velázquez	Project member	Geological Survey of Spain

Annex 2: Communication and dissemination activities

Please select activity	Subcategory	Date	Target audience	Number of people reached	Short name of project participant	Author(s)	Link (if applicable)
PUBLICATIONS	PAPERS		SCIENTIFIC COMMUNITY		IGME	Collados-Lara AJ, Pulido-Velazquez D, Pardo-Igúzquiza E	doi:10.3390/w10091224
PUBLICATIONS	PAPERS		SCIENTIFIC COMMUNITY		IGME	Antonio-Juan Collados-Lara, David Pulido-Velazquez, Rosa María Mateos, Pablo Ezquerro	Accepted, not published
PUBLICATIONS	PAPERS		SCIENTIFIC COMMUNITY		IGME	Pardo-Iguzquiza, Eulogio & Collados-Lara, Antonio-Juan & Pulido-velazquez, David	doi:10.1007/s12665-019-8594-4
PUBLICATIONS	ABSTRACTS	12.4.2019	SCIENTIFIC COMMUNITY	>1000	GEUS	Hinsby K, Gourcy L, Broers HP, Højberg AL, Loveless S	https://meetingorganizer.copernicus.org/EGU2019/EGU2019-18215.pdf
PUBLICATIONS	ABSTRACTS	Dec 2019	SCIENTIFIC COMMUNITY		IGME	David Pulido Velázquez	
PUBLICATIONS	ABSTRACTS	22-27/9 2019	SCIENTIFIC COMMUNITY		TNO	Zaadnoordijk, W. J., Booltink, W., Oudega, M., Gunnink, J. L., & Bierkens, M. F. P.	
PUBLICATIONS	ABSTRACTS	22-27/9 2019	SCIENTIFIC COMMUNITY		TNO	Zaadnoordijk, W. J., & Lourens, A	
PUBLICATIONS	ABSTRACTS	9-13/12-2018	SCIENTIFIC COMMUNITY		TNO	Zaadnoordijk, W. J.	
PUBLICATIONS	ABSTRACTS	30.09.2019	SCIENTIFIC COMMUNITY		SGSS	Paolo Severi	
PUBLICATIONS	NON-SCIENTIFIC PUBLICATION	Nov-2018	GENERAL PUBLIC		IGME, GEUS	África de la Hera, David Pulido and Anker L. Højberg	

Annex 2: Communication and dissemination activities

PUBLICATIONS	THESIS	March 2019	SCIENTIFIC COMMUNITY		IGME	Collados Lara, Antonio Juan	
PUBLICATIONS	PROJECT SPECIFIC PUBLICATION (please specify: leaflet, poster, catalogue, …)	Sep 2018	NON-EU INSTITUTION (national, regional, local)		GEUS	Karlsson IB, Højberg AL	
MEDIA	ONLINE MEDIA	12.4.2019	GENERAL PUBLIC	> 3000	GEUS	Hinsby K	https://geoera-groundwater.com/
MEDIA	ONLINE MEDIA	2.5.2019	GENERAL PUBLIC	> 3000	GEUS	Hinsby K	https://geoera-groundwater.com/
MEDIA	ONLINE MEDIA	3.10.2019	GENERAL PUBLIC	> 3000	GEUS	Hinsby K	https://geoera-groundwater.com/
MEDIA	ONLINE MEDIA	11.19	GENERAL PUBLIC	?	GEUS	Hinsby K	https://geoera.eu/projects/tactic9/
MEDIA	ONLINE MEDIA	10.19	GENERAL PUBLIC	?	GEUS	Karlsson IB	https://geoera.eu/projects/tactic9/
MEDIA	ONLINE MEDIA	2018-2019	SCIENTIFIC COMMUNITY	> 100	GEUS	Karlsson IB, Højberg AL, Hinsby K	https://www.researchgate.net/project/TACTIC-Tools-for-Assessment-of-ClimaTe-change-ImpacT-on-Groundwater-and-Adaptation-Strategies
MEETINGS	CONFERENCE	22.10.2019	NON-EU INSTITUTION (national, regional, local)	>100 (National Hydrology Conference, DK)	GEUS	Tulstrup, J. and Hinsby, K.	http://hydrologidag.dk/media/21533/joergen-tulstrup-geus-introduktion-til-faelles-europaeisk-geologisk-informationsplatform.pdf
PUBLICATIONS	ABSTRACTS	8-10/1-2019	SCIENTIFIC COMMUNITY		GEUS, BRGM, TNO, BGS	Hinsby K, Gourcy L, Broers HP, Højberg AL, Loveless S	

Annex 2: Communication and dissemination activities

MEETINGS	Meeting with international body	2-4/4-2019	EU INSTITUTION	>100	GEUS	Højberg, AL and Hinsby, K	Acccessible on CIRCABC CIS WG Groundwater
EVENTS	CONGRESS	2.5.2019	POLICY MAKERS	> 300	GEUS	Hinsby K	https://www.unece.org/index.php?id=50179
EVENTS	CONGRESS	24.10.2019	NON-EU INSTITUTION (national, regional, local)	>300 (National Groundwater Conference, SE)	GEUS, BRGM, TNO, BGS, BGR,	Hinsby, K., Gourcy, L., Broers, HP, Højberg AL, Bianchi M, Wittenberg, A, van der Gessel, S. and Tulstrup J	https://www.slideshare.net/SGU_Sverige/klaus-hinsbythegeo-eraprogramfocusingongroundwaterprojects
EVENTS	CONGRESS	03.07.2018	GENERAL PUBLIC	> 100 (GeoERA kick-off)	GEUS, BRGM, BGS, IGME	Karlsson IB, Hinsby K, Kidmose J, Majdi M, Bessiere H, Pulido-Velazquez D and Højberg AL	
MEETINGS	Internal project meeting	every other month			GEUS, BRGM, BGS, IGME		
MEETINGS	Internal project meeting	24-26/9-2018			All TACTIC partners		
MEETINGS	Internal project meeting	2-3/10-2019			All TACTIC partners		
MEETINGS	Other	every month			GeoERA Groundwater TC and PLs and GIP-P contact	Hinsby K, Højberg AL, Gourcy L, Broers HP, Bianchi M, Sanabria M.	