



SCOREwater

Smart City Observatories implement REsilient Water Management

DELIVERABLE D4.4 INPUT TO REVISION PHASE REGARDING TESTING TECHNOLOGIES FOR WATER MANAGEMENT

Dissemination level	Public
Type	Report
Issued by	IVL
Contributing project partners	All project partners as questionnaire respondents
Author(s)	Matschke Ekholm, H. and Wood Hansen, O.
Reviewed by	de Jong, P.M. and Sanne, J.M.
Keywords	Evaluation, barriers, enablers
Number of pages	29
Number of annexes	2
Date:	2021-08-31
Version:	V 1
Deliverable number	D4.4
Work Package number:	WP 4
Status:	Delivered
Approved by coordinator (IVL)	2021-08-31

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REVISION HISTORY

Version	Reason for changes	Name	Date
1	Original release	Hanna Matschke Ekholm, Oskar Wood Hansen	2021-08-31





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ABBREVIATIONS

Abbreviation	Definition
CKAN	Comprehensive Kerbal Archive Network
ICT	Information and Communications Technology
IoT	Internet of Things
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprise



PROJECT ABSTRACT

SCOREwater focuses on enhancing the resilience of cities against climate change and urbanization by enabling a water smart society that fulfils SDGs 3, 6, 11, 12 and 13 and secures future ecosystem services. We introduce digital services to improve management of wastewater, stormwater and flooding events. These services are provided by an adaptive digital platform, developed and verified by relevant stakeholders (communities, municipalities, businesses, and civil society) in iterative collaboration with developers, thus tailoring to stakeholders' needs. Existing technical platforms and services (e.g. FIWARE, CKAN) are extended to the water domain by integrating relevant standards, ontologies, and vocabularies, and provide an interoperable open-source platform for smart water management. Emerging digital technologies such as IoT, Artificial Intelligence, and Big Data is used to provide accurate real-time predictions and refined information.

We implement three large-scale, cross-cutting innovation demonstrators and enable transfer and upscale by providing harmonized data and services. We initiate a new domain “sewage sociology” mining biomarkers of community-wide lifestyle habits from sewage. We develop new water monitoring techniques and data-adaptive storm water treatment and apply to water resource protection and legal compliance for construction projects. We enhance resilience against flooding by sensing and hydrological modelling coupled to urban water engineering. We will identify best practices for developing and using the digital services, thus addressing water stakeholders beyond the project partners. The project will also develop technologies to increase public engagement in water management.

Moreover, SCOREwater will deliver an innovation ecosystem driven by the financial savings in both maintenance and operation of water systems that are offered using the SCOREwater digital services, providing new business opportunities for water and ICT SMEs.

EXECUTIVE SUMMARY

This deliverable is part of subtask 4.1.2 (Iterative evaluations) and is the third in a series of evaluations through the project process. The purpose is to share and bring forward experiences to improve the implementation of technologies and services and how to demonstrate the SCOREwater platform.

Task 4.1.2, when complete, will with the final deliverable (D4.5) summarize findings from the different phases and lastly from the evaluation phase. The different evaluations are done to collect information and lessons learned to use in the progress and provide input to every upcoming phase. For this phase, the evaluation is focusing on barriers and/or enablers for testing in real environment in the three cities (experiences regarding for example deployment of sensors, set up of models etc).

The evaluation is done through a web-based survey. The survey was sent out to all project partners (51 people) known to be involved in SCOREwater in the testing phase. All were given a little more than two weeks to answer. In the end a total of 21 people responded.

The focus in the evaluation are key factors which may have hindered the process or can enable progress in phases to come, as well as to identify what works well, lessons learned and what can be improved. It is structured into three themes and 'other' to catch any insights that does not fit into the themes: Organization and planning, Technical aspects and Communication and stakeholder interaction.

The results show that across the three themes technical challenges were the most prevalent. Technical challenges were experienced by 48 % of respondents, compared to 24 % communications and stakeholder interaction and 32 % organization and planning (among the latter 52 % was reported, but four elaborations on the answers showed these were of technical nature).

Challenges regarding technical aspects were mostly related to hardware issues resulting in questionable data quality, but also software issues. It was also stated that the original planning had not left time for technical complications and the adjustments that followed which have caused some difficulties and is an important lesson for the future.

76 % of the respondents had positive experiences in both two other themes (communications and stakeholder interaction, organization, and planning). The value of collaboration and communication with partners were by several respondents identified as the biggest success and something they will value higher in the future. The importance of initiating stakeholder contact early was also emphasised.

Further, the importance of epidemiology for wastewater for city management and how different cities can face similar challenges and recognized the value of learning from other cities.

Other types of barriers were for example organisational challenges related to "large" or "traditional" organisations, commercial viability as a challenge and that the intended replication of cases was not properly planned from the outset.

1. PURPOSE AND AIM WITH DELIVERABLE

This deliverable is part of subtask 4.1.2 and is the second in a series of evaluations through the SCOREwater project. The purpose is to share and bring forward experiences to improve the implementation of technologies and services and how to demonstrate the SCORE water platform.

Task 4.1.2, when complete, will summarize findings from the different phases and lastly from the evaluation phase. The different evaluations are carried out to collect information and lessons learned to use in the progress and provide input to every upcoming phase. For this phase, the evaluation is focusing on barriers and/or enablers when testing in real environment in the three cities (experiences regarding for example planning and organization, deployment of sensors, set up of models, communication etc).

The deliverable provides good insights regarding experiences and lessons from the testing phase and compile lessons from the whole project, therefore it is a significant deliverable to Milestone 4: First lessons from testing. The aim with this deliverable is thus to compile lessons learned and provide insights to milestone 4. The deliverable further aims to provide knowledge to improve conditions for the next phase of the project, enable progress and support the development, implementation, and effective use of smart water management. With the purpose to contribute to ensure development and improvement from the perspectives of both users and developers.

The deliverable reports the results from the third evaluation carried out through a survey to all project partners and summarize their experiences, lessons, and input. It is deliverable type “report”.

2. BACKGROUND TO THIRD PROJECT EVALUATION

The first evaluation was carried out in the Spring of 2020 (M12) and was partly a trial for the evaluation format which was being tested. At that time not many activities were fully carried out in the project yet.

The first evaluation (D4.2) showed that collaboration, involvement of different perspectives and complexity of technical issues needed to be addressed to move forward to the next phases, as well as further analysed.

The second evaluation (D4.3) covered the implementation phase where the Data Analytics and Machine Learning techniques (WP2) and the platform (WP3) were implemented for testing in the demonstration cases, including the adaptive deployment of sensors, algorithms, models as well as setting up processes for using the platform and the data (WP4), promoted through WP7.

Due to the Covid-19 pandemic many activities within WP4 as well as other packages could not be carried out according to plan. Thus, several deliverables were delayed, including this evaluation which was postponed to align with the other activities and deliverables in the project and to better evaluate the testing phase.

The questionnaire for this evaluation has been slightly updated from the prior survey. Changes were made first to better assist the respondents in fitting their responses into the themes. Second, to ensure an equal focus on barriers and learning. Third and last, to assist the respondents in evaluating all aspects of the testing phase to get a comprehensive evaluation.

3. THE SURVEY

The evaluation was done through a web-based survey, questions found in Annex I. The survey was made in the programme ‘Surveygenerator’. It was sent out to all project partners (51 people) known to be involved in SCOREwater in the testing phase. All were given a little more than two weeks to answer. Two e-mail reminders were sent out. In the end a total of 21 people responded.

The focus in the evaluation are key factors which may have hindered the process or can enable progress in phases to come, as well as what works well and what can be improved. It is structured into three themes and ‘other’ to catch any insights that does not fit into the themes:

- Organization and planning
- Technical aspects
- Communication and stakeholder interaction
- Other

4. RESULTS

In total, 21 respondents participated in answering the questions for the evaluation. All individuals' answers are anonymous and the figures in this evaluation present aggregated results. The respondents belong to all three cases, but the participation from the Göteborg case is relatively higher. Four respondents have stated that they are not mainly involved in any case or that they work across cases.

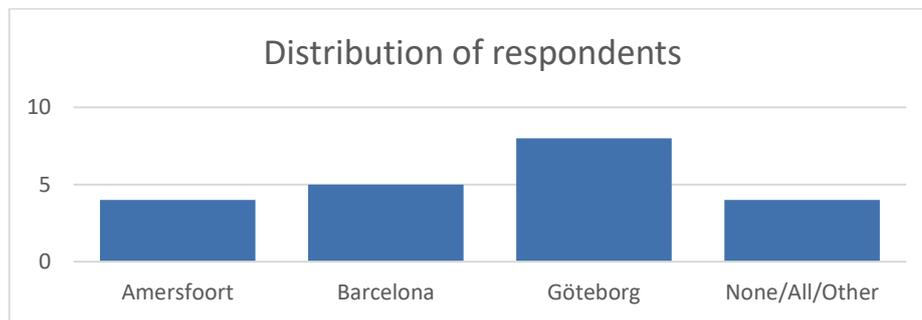


Figure 1: Distribution of respondents in survey of third evaluation

4.1. ORGANIZATION AND PLANNING

This section is about the project partners' experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding organization and management among partners and stakeholders, WP- leaders, task leaders, the planning and coordination of the project and activities etc.

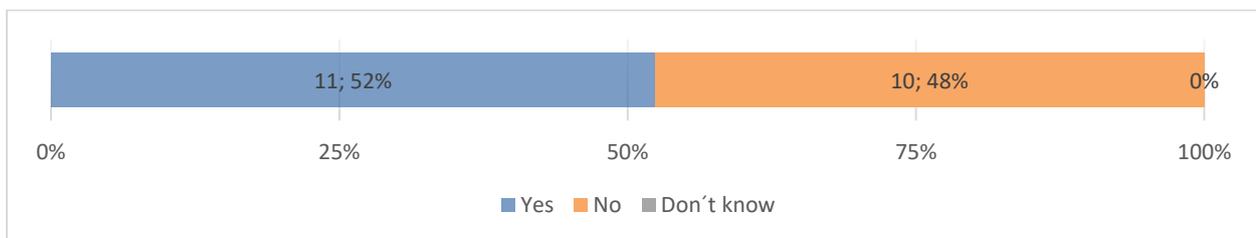


Figure 2: Did you experience any barriers or other challenges with organization or planning in the testing phase (past 12 months)?

More than half of the respondents experienced barriers or alike under this theme. The elaborations from those who did experience challenges shows that some of the barriers does not necessarily classify as organization- or planning-related. Instead, at least four respondents list issues with the sensors, which better classify as technical issues. Other listed barriers were:

1. Three respondents say the COVID19 pandemic affected communication negatively. This was described both in relation to partners, but more so with citizens. (The latter barrier is discussed in more detail in the third section).
2. Four respondents list budget constraints as an issue.
3. One WP4 member mentions communication related to the use of treatment data for machine-learning was an issue: "A barrier was to get permission from some stakeholders to share treatment data with all partners in the SCORE project".

Overall, the respondents do not seem to think that organization or planning has been an issue, especially given the fact that only three respondents point to actual challenges within the category and these refer to the pandemic as the main issue.

Communication issues were tackled by going digital or postponing activities.

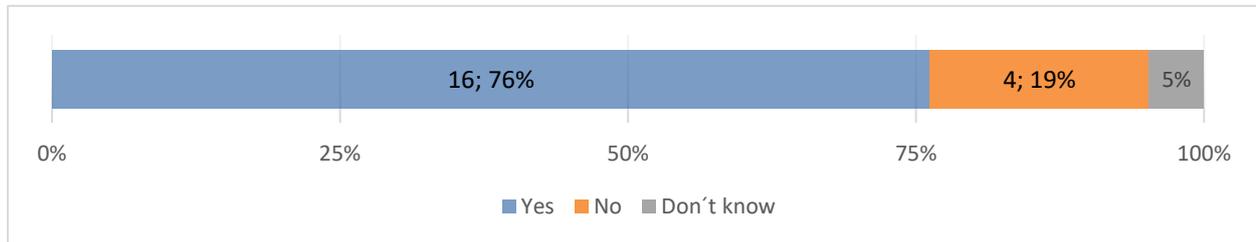


Figure 3: Did you have any positive experiences (e.g. surprises, outcomes, synergies) with organization or planning in the testing phase (past 12 months)?

16 respondents answered affirmatively. Cooperation and knowledge-sharing between partners and other WPs are the most often mentioned examples. The webinars, where each city shared their experiences were useful. One respondent applauds that the events were held as webinars, because it made it easier to attend.

Regular meetings and updates (monthly or bi-weekly) were mentioned as learnings that were useful and could be used in future work. First because it kept people more engaged and gave the project momentum. Second, as two respondents mention explicitly, because relationship-building through meetings also secured a better outcome. One respondent points to good leadership as key:

“A good study case leader like ICRA, and a good coordinator, like IVL, were the key to solve this important problem for the Barcelona case study.”

Summing up the theme

Respondents were asked what could have been done differently and whether there were any lessons that could be generalized. The answers were scattered, but can be grouped into the following four:

- When planning, there must be room for unplanned events.
- When planning meetings, there must be room to invest in relationship-building and not only to discuss functional elements.
- Proper and regular communication is of high importance.
- Everyone who mentions online meetings is positive; productivity, time-saving and reduced climate footprints are mentioned as pros.

4.2. TECHNICAL ASPECTS

This section is about the project partners' experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding the technical work, activities, know how, problem related questions (e.g., IT-infrastructure, communication about IT, data collection/structure/analysis, machine learning, algorithms, platform design etc.)

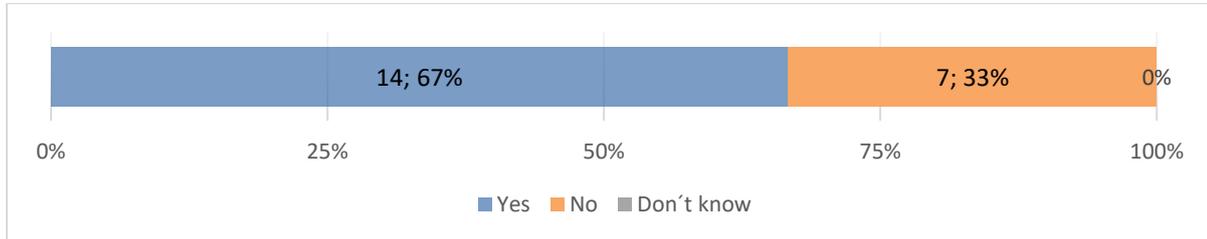


Figure 4: Did you have any positive experiences (e.g. surprises, outcomes, synergies) with technical aspects in the testing phase (past 12 months)?

Of the 14 respondents with positive experiences in the technical aspects five specify that collaboration with other partners went well, of which one mentions that collaboration could work well with so many other partners (4 other WP's) was a positive surprise. Five other respondents are generally positive with the status and hint at being positively surprised by getting an IT-connection to the SCOREwater-platform going.

Two respondents mention that stakeholder engagement, early focus on end-users and prototyping was beneficial for product development.

A more technical learning by one respondent involved in the Amersfoort case, was that the machine learning-algorithm predicts flood patterns at manhole-level in detail. This could possibly be used to generate a model for each manhole - thereby making the early warning-system easier to scale.

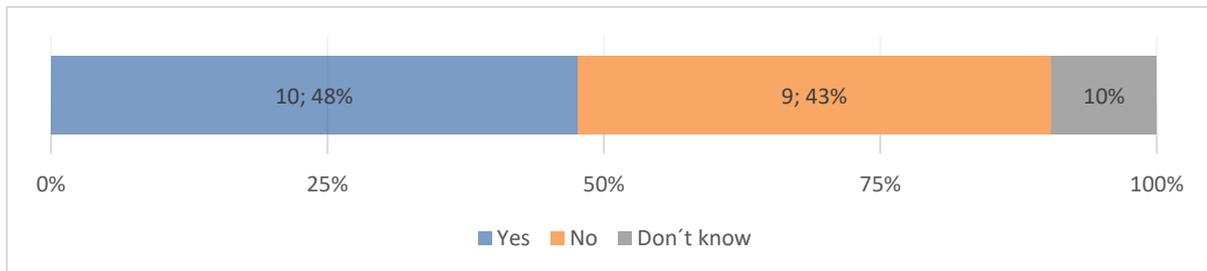


Figure 5: Did you experience any barriers or other challenges with technical aspects in the testing phase (past 12 months)?

Almost half of the respondents experienced technical challenges in the testing phase. The recurring theme (mentioned by six respondents) is related to the sensors; their liability, quality of data generated and on-site installation. These issues were (partly) overcome by switching to other hardware and/or software. Examples of the above are:

- WP3 mentions that the initial software for the marketplace did not work, so they had to find and implement other software.
- WP4/Amersfoort point to the liability and accuracy of sensors and suggests that more sensors might yield more high-quality data. WP4/Göteborg had many difficulties “all kind of things” with the sensors, related to the environment they were placed in e.g. humidity and communication from below ground.

In WP4/Amersfoort it was a challenge to make the “open hardware soil moisture sensors” function well. Two alternatives were tried out unsuccessfully and a back-up plan has been designed, but the group is currently working on a third hardware alternative. There were also hardware issues in Barcelona specifically with the flowmeters.

Three WP4 members (Göteborg and Barcelona) mention challenges with the on-site installation of sensors and access to sites.

Summing up the theme

Respondents were asked what could have been done differently and whether there were any lessons that could be generalized. There were few answers to both questions. The only recurring theme is a request for budgeting and planning to leave some room for unforeseen technically related adjustments.

One respondent compared the experienced challenges as a normal part of innovation but stresses the importance of upfront and continuous risk assessment.

Two respondents had opposing viewpoints on the replication of cases. It went well in Göteborg, but was troublesome in Barcelona, where the respondent suggests that the budget for replicability was insufficient, and that replicability could have been more developed in the proposal.

4.3. COMMUNICATION AND STAKEHOLDER INTERACTION

This section is about the project partners’ experiences (regarding barriers and/or enablers) in the project the past 12 months, regarding the communication and collaboration with other partners/stakeholders/end users in the project etc.

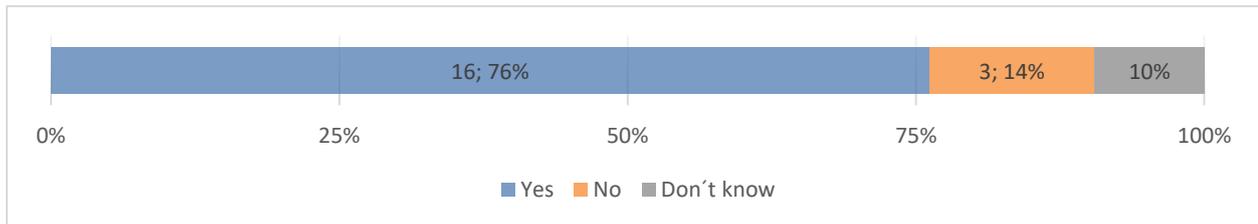


Figure 6: Did you have any positive experiences (e.g. surprises, outcomes, synergies) with communication and stakeholder interaction in the testing phase (past 12 months)?

16 out of 21 respondents had positive experiences under this theme, making it the most positively rated theme of the evaluation. The three cross-case workshops/webinars were highly valued, especially because they attracted an audience from non-project members. Stakeholder meetings internal to each of the three cases were also mentioned as fruitful in terms of sharing knowledge. Two respondents mention a high level of interest from stakeholders. From these positive experiences respondents suggest that stakeholder contact should be initiated early and intensified as soon as the results are somewhat concrete. The stakeholders positive response to the project is seen as very positive and important, as well as useful for future work.



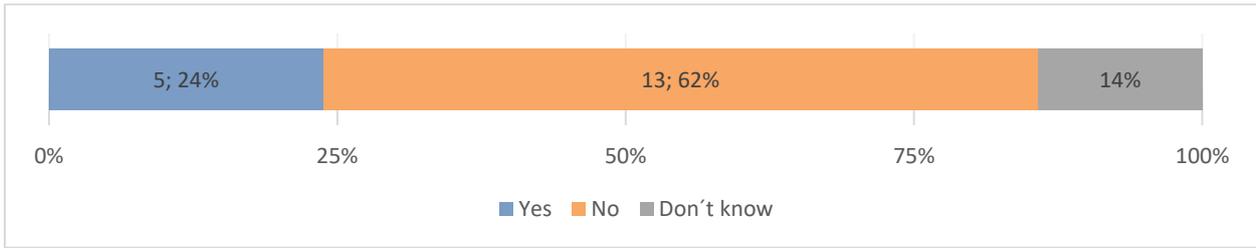


Figure 7: Did you experience any barriers or other challenges with communication and stakeholder interaction in the testing phase (past 12 months)?

Five (24 %) respondents did not have the same positive experience with communication and stakeholder interaction. The covid19 pandemic is mentioned as a barrier to stakeholder engagement especially in regarding citizen involvement. One respondent missed commercial interest and stakeholder commitment. Online meetings could not compensate fully for physical meetings. Another respondent would have liked to see project partners involve each other more. The majority, 62 %, did not experience any barriers or other challenges.

4.3.1. INCLUSION OF STAKEHOLDERS

Almost half of the respondents have not included new stakeholders in the 12 months. In the last evaluation 80 % had included stakeholders. This might be explained by the reformulation of the question: Originally the question was “Have you included perspectives from, and/or involved, different stakeholders” whereas the current questionnaire asked “Have you involved new/different types of stakeholders. On a speculative basis this could also be attributed to the pandemic and/or project maturation.

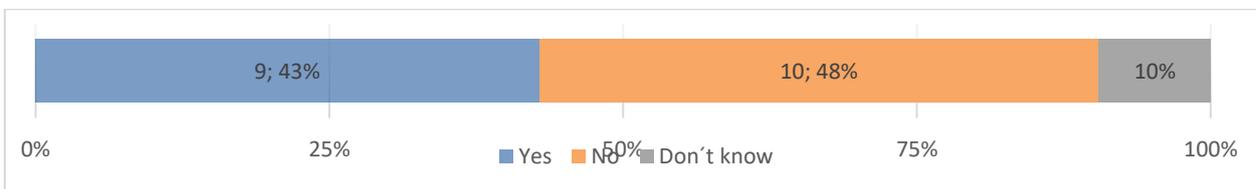


Figure 8: Have you involved new/different types of stakeholders in your work in the last 12 months?

Those that included new stakeholders valued it because:

- New commercial stakeholders provided new information on potential test sites.
- Student participation is also mentioned as particularly refreshing.
- A webinar held on citizen science is also mentioned as being beneficial to expand project reach.
- Communication with the other cases brought insight into the general needs of stakeholders.

4.3.2. PARTNERSHIP ARRANGEMENTS

81 % of the respondents thought the partnership arrangement with key stakeholders worked well (scored 4 or 5 on a scale from 1=failed to 5= constructive). Only 5 percent of respondents scored 2 or less. Overall, this points to a large degree of satisfaction, with slight room for improvement. It is also a slight decrease in satisfaction compared to the prior evaluation (D4.3).

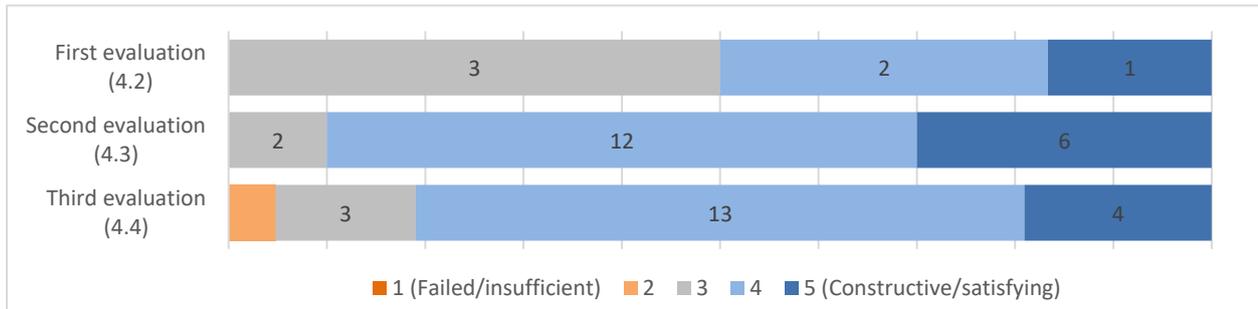


Figure 9: How do you perceive that the partnership arrangements work with relevant key stakeholders? The labels show the numbers of respondents and the width show the relative number.

This can be compared to an even larger degree of satisfaction with the arrangements with project partners, where 86 % scored 4 or 5 and 0 % scored 2 or less. In absolute terms this is no change from the prior evaluation.

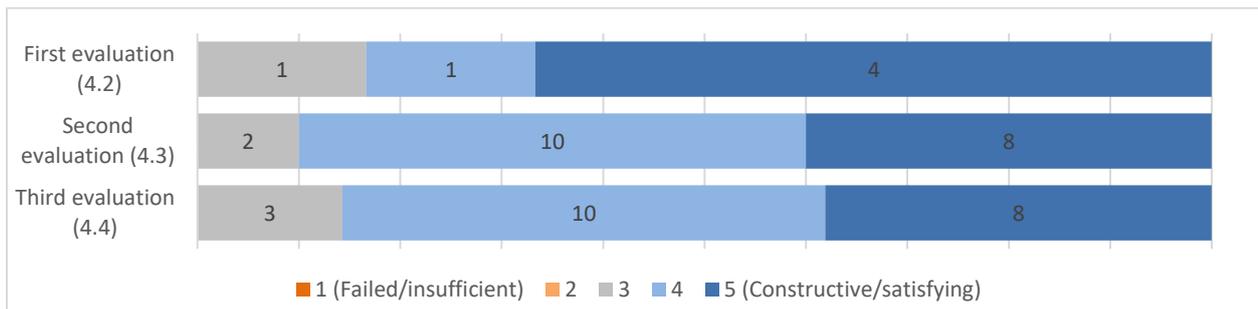


Figure 10: How do you perceive that the partnership arrangements work with partners? The labels show the numbers of respondents and the width show the relative number.

The challenges related to the partnership arrangements vary between respondents. Four of them mention coordination and unaligned goals and ambitions. One mentions that it can be hard to communicate externally if there is nothing tangible to show.

Summing up section 4.3

Respondents were asked what could have been done differently and whether there were any learnings that could be generalized. Five respondents made suggestions:

- Better planning: more communication and a larger number of more specific deadlines. (1 respondent)
- Focus on stakeholders with financial interest in the solutions, rather than just general or technical interest. In the same vein two respondents suggest early contact with a broader group of potential customers and a narrower focus on business-oriented projects. (3 respondents total)
- Early collaboration with projects with similar funding and early integration of partner networks. (1 respondent)

4.4. OTHER THEMES OF EVALUATION

4.4.1. IDENTIFIED BARRIERS AND SUGGESTIONS

57 % of respondents did not identify barriers or challenges other than those already mentioned. This is a slight improvement from evaluation 4.3 where the number was 50 %. In absolute terms 4 respondents experienced legal, behavioural or standardisation barriers, compared to 7 in the prior evaluation. On the other hand, there was one more respondent who identified “other” barriers. All in all, this shows no significant change.

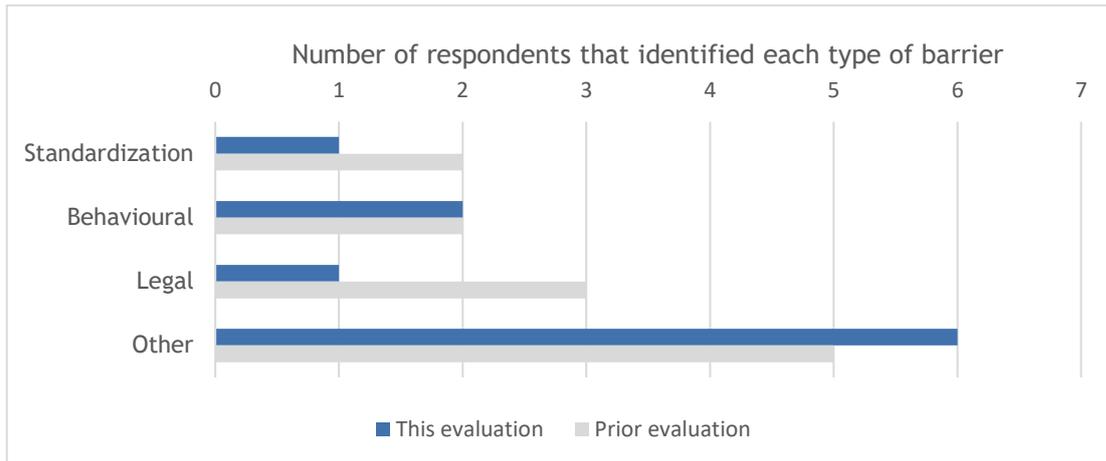


Figure 11: Have you identified any barriers in your work so far? (barriers outside the three themes mentioned above).

The description of the barriers experienced give more depth, but also contain several repetitions mentioned in previous section. Among those new, two had organisational challenges related to “large” or “traditional” organisations. Two other mention commercial viability as challenge (“scale and market size” and “commercial interest”). One mention that the intended replication of cases was not properly planned from the outset.

There are also several suggested improvements:

- Budget cuts should be discussed with those directly affected.
- Better engagement from within-project partners when distributing milestones.
- The task of replication needs better planning and to be better described.¹
- More analysis of legal barriers (e.g. legal responsibility for emissions and clean water standards).

4.4.2. IMPORTANT LESSONS

Of the 10 responses, half of them point to the value of collaboration and communication with partners as the biggest success and something they will value higher in the future. This is exemplified by three uplifting citations:

“(…) when [collaboration] works and provides value for all parties involved it gives great energy”

¹ Note that work on deliverable D6.6 *Plan for replication of cases* was still in progress at the time of this evaluation. In accordance with the project plan, D6.6 will be finalized in October 2021.

“The more various background the bigger the outcome and knowledge exchange”

“Working with relevant partners results in good progress and enables many relevant topics to progress much faster.”

Other lessons varied. One foresees great difficulty with creating a data market. Two mention the importance of epidemiology for wastewater for city management. Two others learnt how different cities can face similar challenges and recognized the value of learning from other cities.

5. CONCLUSIONS

Across the three themes technical challenges were the most prevalent. Technical challenges were experienced by 48 % of respondents, compared to 24 % communications and stakeholder interaction and 32 % organization and planning (among the latter 52 % was reported, but four elaborations showed these were of technical nature).

Looking at the positives, 76 % of the respondents had positive experiences in both two other themes (communications and stakeholder interaction, organization, and planning).

Within the theme of organization and planning many respondents have had a very positive experience with regular project meetings. Good communication and the importance of relationship-building were emphasized as especially valuable in times of physical restrictions due to the pandemic. Besides the communicational difficulties brought up by the pandemic - which was mentioned as surprisingly easy to overcome - there were very few barriers in this theme.

The theme of technical aspects contained more troubles. The challenges were mostly related to hardware issues resulting in questionable data quality, but there were also software issues. The obstacles are judged as manageable, but not all have been overcome yet. Related to these issues were a general point that the original planning had not left time for technical complications and the adjustments that followed.

The theme of communications and stakeholder interaction yielded positive evaluations. Many respondents praised the three cross-case workshops and engaged stakeholder interaction. The importance of initiating stakeholder contact early was emphasised, but the rate of success was higher when the respondents had brought tangible, no matter if premature, results to the table. Several respondents speculated that focusing more on stakeholders with a commercial interest, rather than general or technical would improve the product. Last, several mentioned that citizen participation was challenged by the pandemic.



ANNEX 1: SURVEY QUESTIONNAIRE

WELCOME!

This is the third evaluation within SCOREwater and work package 4. It is focusing on the testing phase, about the last 12 months of the project. The survey is structured in 4 categories:

- Organization and planning
- Technical aspects
- Communication and stakeholder interaction
- Other evaluation themes

Please note that same questions will appear under each category - keep your response focused to the category you are answering questions about All open answer-questions are optional but please elaborate on your answers where you see relevant. Deadline to complete the survey is July 2, 2021.

Practical info: As soon as you click 'Next' your answers are saved. It is possible to go back and to pause the survey and finish it later. Just use the link in the e-mail. If you have any questions, please contact: hanna.matschkeekholm@ivl.se Thank you for your contribution!

First are some questions about who you are! (name and affiliation will not be shown in results report)

What is your name?

Which organization/company do you belong to?

Which WP are you mainly involved in?

Which demonstration case are you mainly involved in (if all 3 write "all")?

Organization and planning

This section is about your experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding organization and management among partners and stakeholders, WP-leaders, task leaders, the planning and coordination of the project and activities etc.





Did you experience any barriers or other challenges with organization or planning in the testing phase (past 12 months)?

Yes

No

Don't know

Please describe the barriers or other challenges:

Please describe if and how you managed these:

Organization and planning This section is about your experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding organization and management among partners and stakeholders, WP- leaders, task leaders, the planning and coordination of the project and activities etc.

Did you have any positive experiences (e.g. surprises, outcomes, synergies) with organization or planning in the testing phase (past 12 months)?

Yes

No

Don't know

Please describe the positive experiences:

If relevant, please describe any learnings from these that can be used in future projects:





To sum up on this theme: Organization & planning Is there anything that could have been, or you would have done differently? Please describe what and how

Are there any of the learnings that can be generalised applied in other projects? Please describe these and how they can be used onwards.

Technical aspects This section is about your experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding the technical work, activities, know how, problem related questions (e.g., IT-infrastructure, communication about IT, data collection/structure/analysis, machine learning, algorithms, platform design etc.)

Did you have any positive experiences (e.g. surprises, outcomes, synergies) with technical aspects in the testing phase (past 12 months)?

Yes

No

Don't know

Please describe the positive experiences:

If relevant, please describe any learnings from these that can be used in future projects:

Technical aspects

This section is about your experiences (regarding barriers and/or enablers) in the project the last 12 months, regarding the technical work, activities, know how, problem related questions (e.g., IT-infrastructure, communication about IT, data collection/structure/analysis, machine learning, algorithms, platform design etc.)





Did you experience any barriers or other challenges with technical aspects in the testing phase (past 12 months)? Examples: Unexpected technological requirements, installation of sensors, software implementation, access, technical skills, IT.

Yes

No

Don't know

Please describe the barriers or other challenges:

Please describe if and how you managed these:

To sum up on this theme: Technical aspects: Is there anything that could have been, or you would have done differently? Please describe what and how

Are there any of the learnings that can be generalized and applied in other projects? Please describe these and how they can be used onwards

Communication and stakeholder interaction

This section is about your experiences (regarding barriers and/or enablers) in the project the past 12 months, regarding the communication and collaboration with other partners/stakeholders/end users in the project etc.

Did you have any positive experiences (e.g. surprises, outcomes, synergies) with communication and stakeholder interaction in the testing phase (past 12 months), eg. in interacting with any of the stakeholder types?

Yes

No

Don't know

Please describe the positive experiences:



If relevant, please describe any learnings from these that can be used in future projects:

Communication and stakeholder interaction This section is about your experiences (regarding barriers and/or enablers) in the project the past 12 months, regarding the communication and collaboration with other partners/stakeholders/end users in the project etc.

Did you experience any barriers or other challenges with communication and stakeholder interaction in the testing phase (past 12 months)?

Yes

No

Don't know

Please describe the barriers or other challenges:

Please describe if and how you managed these:

Communication and stakeholder interaction This section is about your experiences (regarding barriers and/or enablers) in the project the past 12 months, regarding the communication and collaboration with other partners/stakeholders/end users in the project etc.

Have you involved new/different types of stakeholders in your work in the last 12 months?

Yes

No

Don't know

Please describe how and what you gained from that:



How do you perceive that the partnership arrangements work with each of the following?

Please rate on a scale from 1 to 5 where 1 is Failed or insufficient and 5 is Constructive/satisfying

	1	2	3	4	5
Relevant key stakeholders	<input type="checkbox"/>				
Partners	<input type="checkbox"/>				

Please elaborate your answer. For example, what challenges regarding partnership engagement have you encountered and how have you managed those:

To sum up on this theme: Communication and stakeholder interaction Is there anything that could have been, or you would have done differently? Please describe what and how

Are there any of the learnings that can be generalised and applied in other projects? Please describe these and how they can be used onwards

Other evaluation themes

Have you identified any other barriers in your work so far (e.g. standardisation, behavioural or legal barriers)?

Standardization	<input type="checkbox"/>
Behavioural	<input type="checkbox"/>
Legal	<input type="checkbox"/>
Other	<input type="checkbox"/>
No	<input type="checkbox"/>

If yes, please explain the issues/problems, how it affected you and how you managed it:





Please give an example of something that you hope would be improved (in the next phase and future months of the project):

What is the most important lesson learned so far in the SCOREwater project?

You have now reached the end of the survey. By pressing "Next" you will submit your answers. You can at any time (before the survey closes) go back and change your answers. Thank you!



ANNEX 2 – STOCKTAKING

A final Annex of stocktaking was included in all Deliverables of SCOREwater produced after the first half-year of the project. It provides an easy follow-up of how the work leading up to the Deliverable has addressed and contributed to four important project aspects:

1. Strategic Objectives
2. Project KPI
3. Ethical aspects
4. Risk management

STRATEGIC OBJECTIVES

Table 1 lists those strategic objectives of SCOREwater that are relevant for this Deliverable and gives a brief explanation on the specific contribution of this Deliverable.

Table 1. Stocktaking on Deliverable’s contribution to reaching the SCOREwater strategic objectives.

Project goal	Contribution by this Deliverable
SO5	<p>The deliverable could indirect help contribute to reach expected impact. It contributes to SO5 direct as this is one of the key deliverables identifying and reporting on key barriers.</p> <p>It is part of improving conditions for coming work, enable progress and to support the development by aiming towards sharing and bring forward experiences to reach improvement in implementing and demonstrate the SCORE water platform. It is therefore contributing to SO5 to identify and mitigate barriers for implementation.</p>

PROJECT KPI

Table 2 lists the project KPI:s that are relevant for this Deliverable and gives a brief explanation on the specific contribution of this Deliverable.

Table 2. Stocktaking on Deliverable’s contribution to SCOREwater project KPI’s.

Project KPI	Contribution by this deliverable
10	<p>Standardization barriers identified and mitigation options demonstrated:</p> <ul style="list-style-type: none"> • 57 % of respondents did not identify barriers or challenges other than those already mentioned. This is a slight improvement from evaluation 4.3 where the number was 50 %. In absolute terms 4 respondents experienced legal, behavioural or standardisation barriers, compared to 7 in the prior evaluation.
11	<p>Behavioural barriers identified and mitigation options demonstrated</p> <ul style="list-style-type: none"> • 57 % of respondents did not identify barriers or challenges other than those already mentioned. This is a slight improvement from evaluation 4.3 where the number was 50 %. In absolute terms 4 respondents experienced legal, behavioural or standardisation barriers, compared to 7 in the prior evaluation.
12	<p>Technological barriers identified and mitigation options demonstrated</p>

Project KPI	Contribution by this deliverable
	<ul style="list-style-type: none"> 67 % says they have experienced technical barriers in the project the last 12 months, regarding the technical work, activities, know how, problem related questions (e.g., IT-infrastructure, communication about IT, data collection/structure/analysis, machine learning, algorithms, platform design etc.). See section 4.2.
13	Organizational barriers and enablers identified and mitigation options demonstrated <ul style="list-style-type: none"> 52 % Says they have experienced barriers regarding for example organization and management among partners and stakeholders, WP- leaders, task leaders, the planning and coordination of the project and activities etc. See section 4.1

ETHICAL ASPECTS

Table 3 lists the project’s Ethical aspects and gives a brief explanation on the specific treatment in the work leading up to this Deliverable. Ethical aspects are not relevant for all Deliverables. Table 3 indicates “N/A” for aspects that are irrelevant for this Deliverable.

Table 3. Stocktaking on Deliverable’s treatment of Ethical aspects.

Ethical aspect	Treatment in the work on this Deliverable
Justification of ethics data used in project	Not relevant
Procedures and criteria for identifying research participants	Not relevant
Informed consent procedures	Not relevant
Informed consent procedure in case of legal guardians	Not relevant
Filing of ethics committee’s opinions/approval	Not relevant
Technical and organizational measures taken to safeguard data subjects’ rights and freedoms	Not relevant
Implemented security measures to prevent unauthorized access to ethics data	No ethics data has been handled
Describe anonymization techniques	The survey was sent out to all project partners, but no information is given in this report about who have responded and what the single individuals have answered.
Interaction with the SCOREwater Ethics Advisor	None, not relevant



RISK MANAGEMENT

Table 4 lists the risks, from the project's risk log, that have been identified as relevant for the work on this Deliverable and gives a brief explanation on the specific treatment in the work leading up to this Deliverable.

Table 4. Stocktaking on Deliverable's treatment of Risks.

Associated risk	Treatment in the work on this Deliverable
	No risk from the risk log identified





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