European Partnership

Progressing towards the alignment aims and objectives

Deliverable D1.10, April 2025

Co-funded by the European Union

OUTPUT SUMMARY PROJECT INFORMATION	
Project Title	European Partnership Water4All – Water security for the planet
Project Acronym	Water4All
Call Identifier	Horizon-CL6-2021-Climate-01-02
Contract Number	101060874
Starting Date	1 June 2022
End Date	31 May 2029
Web-Site Address	www.water4all-partnership.eu
Coordinator	ANR
Management Team	Benjamin LOPEZ, Juliette ARABI, Armelle MONTROSE, Claire TREIGNIER
E-Mail	Water4All@agencerecherche.fr
Phone Number	+33 1 78 09 81 20 / +33 1 73 54 81 43

Deliverable Title	Progressing towards alignment aims and objectives
Deliverable Number	D1.10
Work Package	WP1 - PILLAR A: Water4All's Joint Vision and Strategic Research and Innovation Agenda (SRIA)
WP leader	ANR
Nature	R (Report)
Dissemination	PU (Public)
Editor (s)	Maria Chiara Sole, Vittoria Laterza, (ISPRA), Francesco Fatone, Francesco Ferlaino (UNIVPM)
E-Mail (s)	mariachiara.sole@isprambiente.it; vittoria.laterza@isprambiente.it
Phone Number	
Date of Delivery	28/02/2025

Verification by	ESTHER DIEZ CEBOLLERO (ANR)
Date	23/02/2025
Validation by	Claire TREIGNIER (ANR)
Date	29/04/2025

Acknowledgements

Water4All has received funding from the European Union's Horizon Europe Programme under Grant Agreement 101060874.

The contents of this document mainly build upon the experience accumulated by Water4All partners that contributed in the past to the impact analysis of Water JPI's funded projects. We wish to acknowledge the invaluable contribution of Pillar a's Water4All partners in the preparation of this document.

Special thanks to the European Commission for funding this ambitious programme.

TABLE OF CONTENTS

LIST OF ACRONYMS

Acronym	Full title
AMR	Anti Microbial Resistance
Biodiversa+	European Biodiversity Partnership
CSA	Coordination and Support Action
DUT	Partnership on Driving Urban Transitions to a sustainable future
JPI	Joint Programming Initiative
P2P	Public to Public
PRIMA	Partnership for Research& Innovation in the Mediterranean Area
RDI	Research, Development and Innovation
R&I	Research and Innovation
RL	Readiness Levels
SBEP	Sustainable Blue Economy Partnership
S3	Smart Specialization Strategies
SRIA	Strategic Research and Innovation Agenda
UN-SDGs	United Nations' Sustainable Development Goals
WFD	Water Framework Directive

ABSTRACT

The aim of this report (**D 1.10, Progressing towards alignment aims and objectives**) according with Task A.2 in the frame of **Pillar A** activities of **Water4All** Program (Alignment and coordination of Research, Development and Innovation programs and actions in this field) is to provide a definition of alignment adapted to the **Water4All**'s vision for a Partnership on Water security for the planet.

Starting from the key lessons and practices of the Water JPI's Task Force on alignment (led by ISPRA and UNIVPM) and from the ERA-LEARN 2020 project, the report delivers a scheme of alignment in the **Water4All**'s framework and details a list of several instruments to develop a strategic approach for alignment's implementation. In order to obtain **Water4All**'s alignment objectives, several mappings of water related programmes and projects at different levels (from regional, national up to international) will be carried out, starting focusing on Italy, Spain, France, Portugal.

The results of this mapping activity will be compared to the water R&I priorities listed in **Water4All**'s SRIA (Strategic Research and Innovation Agenda) enabling to allow the definition of common R&I priorities and management practices but especially to have a perfect match between **Water4All**'s activities and regional, national and EU policies international frameworks. The alignment has also relevance for the **Water4All**'s goals to harmonize the strategic R&I objectives, the operational rules of joint activities and the development of tools for information sharing. A specific workshop was organized (on the 23rd of January 2025 in Rome, at ISPRA) to gather stakeholders' view on alignment ant their inputs for its implementation and improvement. The outcomes of the workshop are presented at the end of this deliverable. They are complementary to the current methodology and are to be considered as an added value for the completion of the work that will be done during the Phase 2 of the **Water4All** Partnership.

All the different activities have been designed to maximise the impact of R&I activities of the Partnership; better cover research gaps; create a critical mass; ensure the mobilisation of limited resources in securing water for all.

INTRODUCTION TO WATER4ALL

The **Water4All Partnership-Water Security for the Planet** was launched in June 2022. It is co-funded by the European Commission under the framework of Horizon Europe.
This Research and Innovation (R&I) programme is focused on scientific research in freshwater with the aim to tackle water challenges to:

- improve access to water resources;
- ensure that adequate water supplies are available for food and energy production, agriculture, industry, transport and tourism;
- enhance the resilience of populations to global changes and water-related hazards including floods, droughts and pollution.

The project **Water4All** will adopt a systemic approach to boost transformations and changes across the entire water research from the source to the sea, fostering the matchmaking between problem owners and solution providers (**Water4All** SRIA, 2022). For this purpose, it will last seven years from 2022 to 2029 with the extension of some activities till 2032.
Water4All's overall goals include:

- Strengthening the water R&I collaboration and strategic coordination for the conservation, restoration, regeneration and best use of the natural functions of groundwater, surface water and dependent or associated ecosystems.
- Supporting and promoting demonstration and access to the market of innovative solutions.
- Communicating water-related knowledge and data through open access.
- Providing tools for water management through innovative knowledge, methodologies and tools.
- Designing and implementing approaches for the participatory development of innovation whilst ensuring their empowerment, capacity-building, accountability and transparency.

The **Water4All Partnership** is coordinated by the French Research Agency (ANR, in French) and groups 90 partners from 33 countries in the European Union and beyond (Brazil, Georgia, Israel, Moldova, Norway, South Africa, Switzerland, Turkey, Tunisia, United Kingdom). It's open to collaboration with EU Missions, like the Mission "Restore our Ocean and Waters by 2030", and other Horizon Europe Partnerships such as the ones on Biodiversity (Biodiversa+), Sustainable Blue Economy (SBEP) and Driving Urban Transitions (DUT).
The program is organized in 5 action Pillars (namely A, B, C, D, E) and 1 Coordination & Management Pillar (namely 0) and covers a wide portfolio of multi-national and cross-sectoral activities, from physical and biological sciences to human and social sciences.
The project outcomes will contribute to offer innovative solutions to address most pressing challenges in water supply and sanitation. They will also support relevant European policies and international frameworks: EU Green Deal, the Water Framework Directive (WFD) and the United Nations' Sustainable Development Goals (UN-SDGs).

1. OBJECTIVES OF ALIGNMENT AND COORDINATION OF RDI

This report concerns the Task A.2 (Task Leader: ANR) in the frame of **Pillar A** activities (Alignment and coordination of Research, Development and Innovation (RDI) programs and actions in this field). Specifically, it is developed within the **Sub-Task A.2.4: Monitoring and assessment of alignment objectives,** led by ISPRA in collaboration with UNIVPM.
The purpose of Task A.2, as described in the Grant Agreement of the **Water4All Partnership**, is to strengthen alignment and coordination to:

- maximise the impact of R&I activities;
- better cover research gaps;
- create critical mass;
- ensure the mobilisation of limited resources in securing water for all.

Enhanced coordination will be sought with water R&I programmes at different levels (from regional, national up to international).
Task A. 2 foresees 4 subtasks, namely:
-Sub-Tasks A.2.1 Mapping exercise (led by the University of Evora), which is dedicated to "Setting up the tools for mapping the water RDI sector in Europe" and consists of a mapping of:

- water related funding programs at European level, regional level and national level (Water JPI project databases from 2013 to 2020, including joint calls with other initiatives such as Biodiversa+ and JPI AMR);
- research infrastructures;
- mobility schemes;
- international cooperation.

- Sub-Tasks A2.2 Elaboration of recommendations for the first two annual work plans (led by the University of Evora) which is dedicated to gather recommendations to develop the annual planning of activities, through discussions with pillar leaders and an **impact analysis of water R&I projects funded by the Water JPI since the launch of the initiative in 2011 – first call on emerging pollutants in 2013** (led by ISPRA in collaboration with UNIVPM).
More specifically, the impact analysis will consider more than 100 projects. The Water JPI funded projects cover all the thematic priorities of **Water4All**[1]. The chosen methodology is the one developed within the Horizon 2020 Framework Program and the IMPACT-SC5 project[2] , already adapted to **Water4All** by the ANR within the **D 1.4. - How to conduct impact analysis of water RDI in Europe**.

Impact assessment is a crucial component of evidence-based policymaking and decision-making, allowing us to gauge the effectiveness, efficiency, and societal relevance of investments in water-related research and innovation. Through a systematic analysis of project outcomes, outputs, and socio-economic indicators, we aim to identify best practices, lessons learned, and areas for improvement in water management and innovation.

[1] I.e. circular economy (addressed through the Water JPI's call launched in 2014), biodiversity and ecosystems (Water JPI's call launched in 2020), sustainable water management and water infrastructures (2018 call), water quality and health (calls launched in 2013 and 2020).
[2] The IMPACT-SC5 project is a CSA project that set up a framework for monitoring the impact of projects funded by the Horizon 2020's societal challenge 5.

Moreover, by engaging with stakeholders and end-users, we seek to ensure that research findings are translated into actionable insights and policies that contribute to sustainable water governance and societal well-being. The information gathered through the impact assessment will be instrumental in the development of annual implementation plans.

- Sub-Tasks A.2.3: Analysis of synergies and coordination with partner initiatives (led by ANR) aims to ensure collaboration with other relevant initiatives (Driving Urban Transition, Biodiversa+, Sustainable Blue Economy, Agroecology, Mission on Climate Change Adaptation, PRIMA) in order to achieve the goals of the Task A.2 through the organisation of regular meetings, targeted interviews and the direct involvement of partner initiatives in consultative activities within Pillar A.

- Sub-Task A.2.4 (led by ISPRA in collaboration with UNIVPM), which is dedicated to **Monitoring and assessment of alignment objectives** and in which this deliverable **(D 1.10, Progressing towards alignment aims and objectives**) is developed. Within the **Water4All Partnership**, the alignment is particularly relevant because it allows the definition of common R&I priorities and management practices, facilitating:

- the harmonisation of strategic research and innovation objectives;
- the harmonisation of operational rules both in the launch and implementation of joint activities;
- the development of tools for the sharing of information; the perfect match between **Water4All**'s activities and regional, national and EU policies/international frameworks.

Within this framework, the objectives of the deliverable **D1.10** are:

- to give a definition of alignment;
- to provide a comprehensive scheme of alignment;
- to set up specific tools and indicators to pursue the alignment's implementation;
- to set up an action plan to attain **Water4All**'s objectives as regards alignment.

It is relevant to stress that those activities within **Water4All** can count upon key lessons and practices from the Task Force on Alignment of the Water JPI (led by ISPRA and UNIVPM).

2. DEFINITION OF ALIGNMENT

"Alignment is the strategic approach taken by Member States to modify their national research programmes, priorities or activities as a consequence of the adoption of joint research priorities in the context of Joint Programming, with a view to improving the efficiency of investment in research at the level of Member States and the European Research Area[3]*."* (ERA-LEARN 2020). Although this definition is still shared as far as it was in the scope of ERA-LEARN, it is probably not fully adequate to **Water4All**'s vision for a Partnership on Water security, which is "Boosting the systemic transformations and changes across the entire research – water innovation pipeline, fostering the matchmaking between problem owners and solution providers for ensuring water security for all in the long term". Indeed, in the context of **Water4All**, alignment is understood as a broader concept that calls for coordination and integration of common agendas in regional and national programmes, as well as the harmonisation of administrative procedures (including implementation, evaluation and monitoring) for the funding of R&I and the valorisation of project results.

On this basis, and according to **Water4All**, *"Alignment is the strategic and systemic approach (coordinated by* **Water4All***) and a set of initiatives to support decisions of the funding actors to finally harmonize regional / national / international R&I programmes and timelines considering the different scales and Readiness Levels (e.g. Technology, Societal, Legal, Regulatory and/or Organizational)*[4]*, with a view of improving the efficiency of investment across the entire research – water innovation pipeline as well as maximizing the EU funded projects impacts addressing the whole water innovation ecosystem".*

The instruments for the alignment implementation will build on the framework developed by ERA-LEARN. In particular, the practical "toolbox"[5] finalized in 2016-2017 will be revised and adapted to the **Water4All** vision and approach. According to this practical toolbox alignment actions include: the conduct of joint foresight and mapping, the alignment of national research agendas, the execution of joint research programmes through calls for proposals, the standardisation of research methodologies, joint ex-post evaluation of research activities, joint training and capacity building of researchers, the mutual use of (large) research infrastructures, open access to national research data, and joint dissemination and valorisation of scientific results (Figure 1). This shows that alignment is a strategic objective that relates to different phases of the water research and innovation pipeline (as shown in the ERA-LEARN figure below).

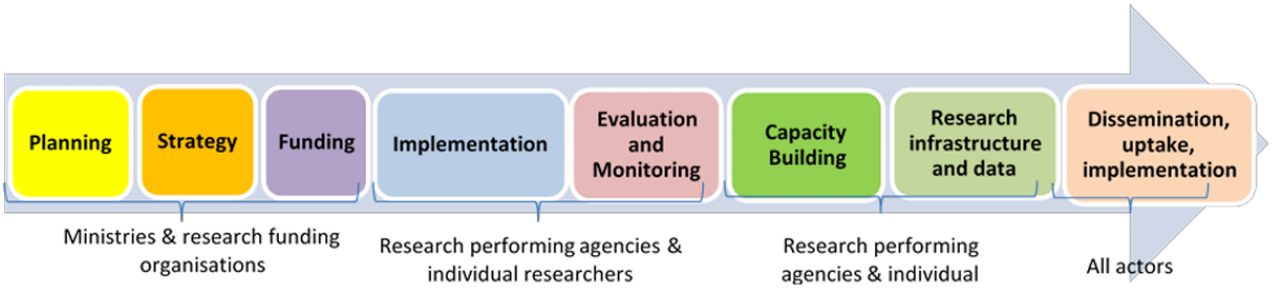

Figure 1. Alignment actions across the entire research and innovation programming cycle.

[3] www.era-learn.eu/documents/era-learn-publications/d3-2_final_3nov2015.pdf
[4] https://ec.europa.eu/isa2/sites/default/files/technology_readiness_revisited_-_icegov2020.pdf
[5] www.era-learn.eu/documents/era-learn-publications/synthesis-report_alignment_sept2017_final.pdf

Water4All upgrades the vision from ERA-LEARN, expanding alignment to policy implementation and market uptake. Hence, the alignment approach proposed by **Water4All** is revised as follows:

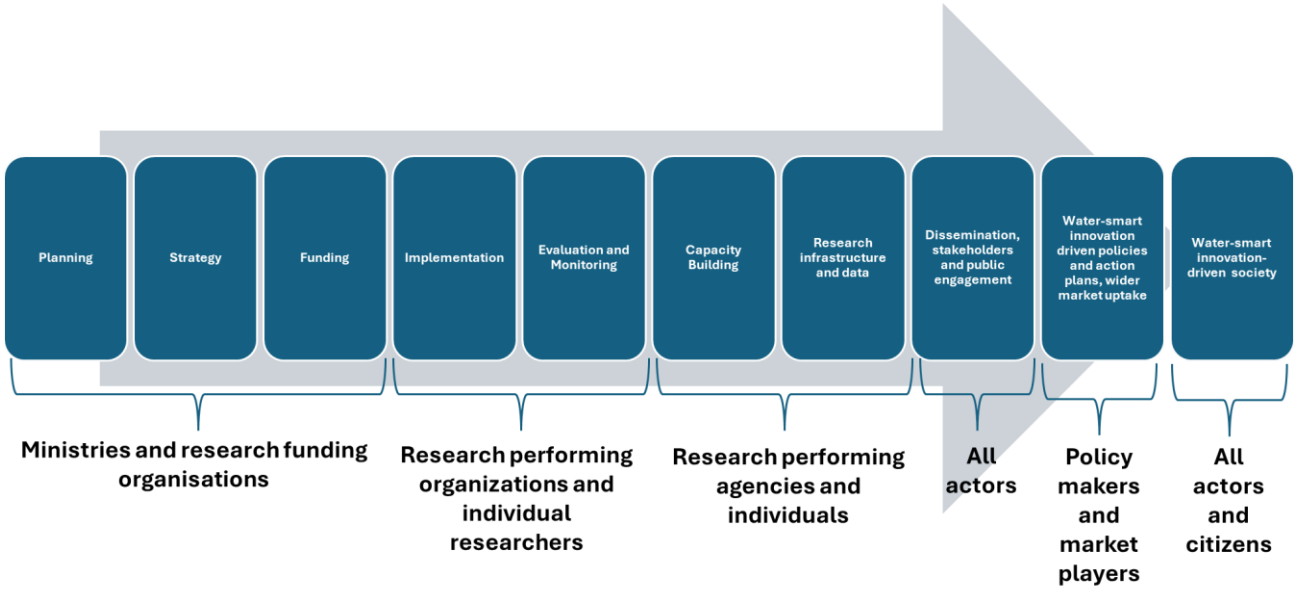

Figure 2. Alignment actions adapted to the **Water4All** vision

As shown in the Figure 2 above, alignment is not precluded to harmonisation in strategy-oriented organisations, like Ministries or research funding organisations. It is a domain that should involve different types of stakeholders at different stages of the R&I chain. Alignment is therefore a multi-actor approach enabling R&I harmonisation from planning to final communication of R&I results.

In addition, **the water innovation ecosystem must consider all the critical supply chains where water has to be secured**. For instance, semiconductors, batteries and hydrogen productions are tightly linked to water use (30 cm wafer requires 8300 litres of water, 1 MW data centre uses 25.5 million liters of water each year, for every kg of hydrogen produced, 9 kg of demineralized water is consumed). **Therefore, alignment strategies have to consider water as a main resource within programs and projects that are not centered on water itself.**

3. INSTRUMENTS FOR THE ALIGNMENT IMPLEMENTATION

The instruments of ERA-LEARN framework have been reviewed and aligned with **Water4All** actions and will be used as guidance for the activities described in the next paragraphs. They are briefly re-elaborated as follows:

- Initially, although the activities delivered by ERA-LEARN were very relevant to guide actors along the water innovation pipeline, after more than five years the key barriers thereby highlighted seem to be still present, especially in terms of showing concrete and tangible results from alignment of research and innovation in short term. Therefore, *LESSONS LEARNED FROM CASE STUDIES and BARRIERS/GAP ANALYSIS* will be elaborated. **In order to critically evaluate the success and barriers of the previous alignment strategies and initiatives, the ERA-LEARN 2020 deliverables and cases will be critically analysed**, to elaborate the concrete and tangible results of previous alignment activities, with specific focus on the period 2017-2024. Considering the R&I innovation pipeline, follow-up strategic actions of the key funding actors and stakeholders will be analysed and reviewed to better evaluate how decisions were practically guided by the alignment. Focus will start in the first phase from Italy, Spain, France and Portugal. Other Countries such as Sweden, South Africa and Latvia might follow in a second later step under the guidance of the results and lessons learned in first phase.

- JOINT MAPPING OF EXISTING regional, national and international PROGRAMS AND PROJECTS where the ALIGNMENT OF THE READINESS LEVELS (RLs) DEFINITION is considered by analysing RLs planned in the SRIA and calls versus the ones achieved in the implemented projects, including focus on the timelines of implementation and innovation uptake. The outputs of the mapping exercise conducted under Task A.2.1 will be instrumental.

- A SYSTEMATIC REVIEW of water-related R&I public final technical reports and, when necessary, selected publicly available (on CORDIS | European Commission) deliverables/results of the Water JPI, PRIMA and Horizon 2020 to ex-post critically analyze how the alignment was achieved, avoiding duplication and facilitating synergies of efforts with reference to the initial objectives agreed within the SRIA. The analysis will identify the implemented research streams, group them into levels, present several sub-themes, highlight important findings and areas with relation to the funding program and SRIAs.

In addition, **Water4All** will adopt instruments mentioned in the ERA-LEARN framework as follows:

Instruments	Application within Water4All
Adoption of common strategic research and innovation priorities	Pillar A – task A1.1
Adoption of a common annual strategic implementation / action plan	Pillar A – task A2.2
Conduct of joint stakeholder consultations	Pillar A – task A1.3, A1.4
Set-up of a network of national (and EU) research funding organisations	Pillar B, task B1
Organisation of a joint transnational call for research proposals	Pillar B, task B2
Support to coordination or synchronisation of national calls for research proposals	Pillar B, task B3
Instruments	**Application within Water4All**

Development of a common framework for monitoring, evaluation and impact assessment for the whole P2P network	Pillar A, task A2.2
Perform a joint project monitoring	Pillar B, task B2
Coordination across P2Ps to develop joint performance indicators	Pillar B, task B2
Cross-border mobility of researchers, policy makers and practitioners	Pillar C, task C3.3
Coordination of a cluster of existing national research infrastructures for reinforcing link with policy observatories and research infrastructures (RI)	Pillar C, task C4.1
Coordination, harmonisation and standardisation of actions towards open data and data sharing	Pillar C, task C4.2, C4.3
Joint exchange, learning and dissemination of research results towards policy makers	Pillar C, task C1.1, C1.2
Joint dissemination of research results towards stakeholders/end-users	Pillar A, task A3 and Pillar C, task C3.4 and C4.2, C4.3
Set-up of a knowledge hub for individual researchers	Pillar C, task C1.1
Establishment of a training programme on alignment implementation at regional, national and European levels	Not included in Water4All activities yet

4. ACTION PLAN TO ATTAIN WATER4ALL'S OBJECTIVES AS REGARDS ALIGNMENT

Based on the framework described above, the following activities will be carried out:

- a mapping of the water-related innovation programs within National and Regional Smart Specialization Strategies (S3), starting focusing on Italy, Spain, France, Portugal;
- a mapping of the Water-Related Innovation Areas in National Recovery and Resilience Plans, with a focus on Italy, Spain, France, Portugal;
- a mapping of the Water-Related National Programs and bottom-up research programs taking Italy as an example (to be integrated afterwards for additional countries);
- the results of this mapping activity will be compared to the water R&I priorities listed in **Water4All**'s strategic agenda.

Below some preliminary details about the activity's implementation.

1. Mapping Water-Related Innovation Programs within National and Regional Specialization Strategies: This task involves the examination of the common aspects between water-related innovation programs and the broader national and regional specialization strategies (S3). These strategies serve as blueprints for economic development, outlining key priority areas and sectors for investment and innovation. Our approach begins with an exhaustive review of the websites of S3 strategies, where we seek to identify specific references to water-related innovation, including initiatives, funding mechanisms, and collaborative networks. However, we recognize that the information available on these websites may be limited in its granularity and may require further validation through critical analysis. Therefore, we will complement our findings by scrutinizing associated documents and reports obtained from our partners, which offer more detailed insights into the strategic objectives, funding allocations, and performance indicators related to water innovation within each

region. By synthesizing information from multiple sources, we aim to construct a nuanced understanding of the evolving landscape of water-related innovation across national and regional contexts.

2. Mapping Water-Related Innovation Areas in National Recovery Plans: Against the backdrop of global challenges such as the COVID-19 pandemic and climate change, national governments have formulated recovery plans aimed at revitalizing economies and building resilience. In this task, our objective is to analyse the extent to which water-related innovation features prominently within these recovery plans in Italy, Spain, France, and Portugal. We will conduct a comprehensive review and critical analysis of the national recovery plans, focusing on sections or provisions related to water management, infrastructure, research, and innovation. By identifying specific initiatives, funding streams, and policy measures aimed at promoting water-related innovation, we aim to assess the coherence and effectiveness of these strategies in addressing pressing societal and environmental challenges.

3. Mapping Water-Related National Programs and Bottom-Up Research Programs: Building upon the insights gleaned from the previous tasks, our focus will be on the landscape of national programs and bottom-up research initiatives dedicated to water-related innovation. We will aim to highlight the diversity of approaches, and the stakeholders involved in driving innovation across different levels of governance and sectors. Starting with Italy as a focal point, we will engage in stakeholder consultations, literature reviews, and data collection efforts to identify government-funded programs, research grants, and collaborative projects focused on water innovation. Additionally, we will explore bottom-up research initiatives emanating from local communities, academia, and civil society organizations, which often serve as catalysts for innovation and problem-solving. By integrating these diverse perspectives and sources of knowledge, we aim to create a comprehensive map of water-related innovation ecosystems, highlighting synergies, gaps, and opportunities for collaboration and knowledge exchange. The information provided by the mapping exercise conducted by the sub-Task A.2.1 (led by the University of Evora) should come to complement this action.

4. Comparison of the mapping results with the SRIA: Building upon the results collected through the mappings we will compare the findings with the themes of the **Water4All**'SRIA

In order to represent the information collected through the mappings, two graphical representations of the results will be built:

A- SRIA theme versus BUDGET allocated (static graph), see Fig. 3 example below from ERA-LEARN.
B- SRIA themes versus SPECIFIC projects (dynamic graph using POWER BI or similar platforms).

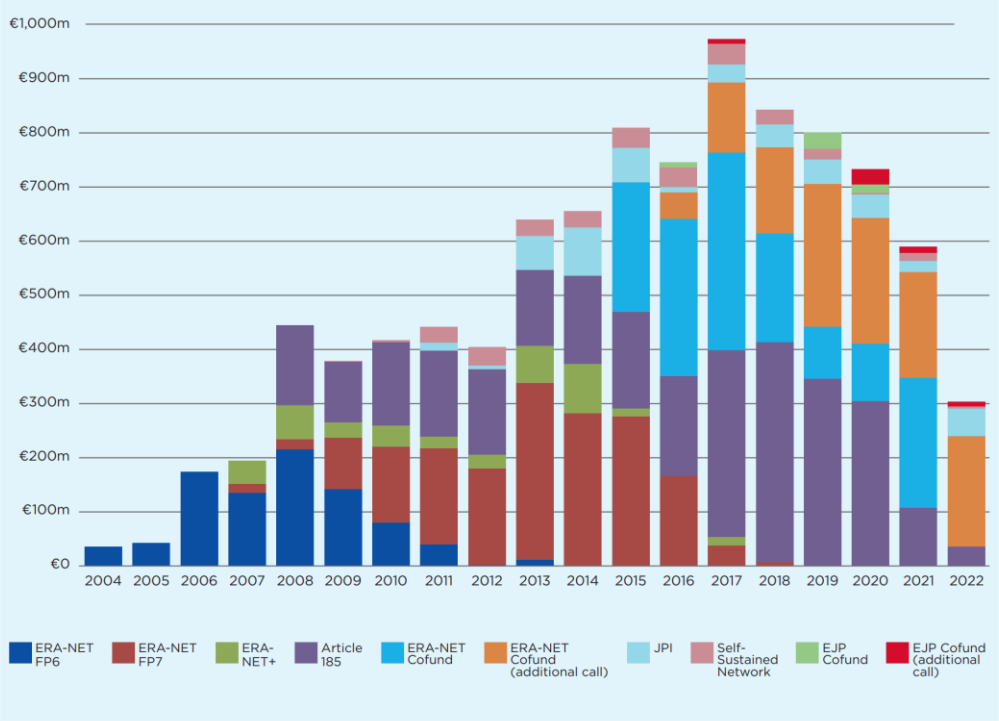

Figure 3. An example of graphical representation for SRIA themes versus budget allocated

5. PRELIMINARY MAPPING FOR ALIGNMENT

A preliminary scheme for mapping has been carried out as follows:

Funding schemes					
European	**National**	**IT**	**ES**	**FR**	**PT**
HORIZON EUROPE - Pillar II - Clusters - call for proposal within HE **European Partnership** - Water4All - One Health - Clean Hydrogen Partnership **Connecting Europe Facility (CEF)** **Programme for the Environment and Climate Action (LIFE)** **Research Fund for Coal & Steel** **ERASMUS+**	National schemes to be identified in the different countries, e.g. Operational National Programmes	e.g. PRIN			
	Recovery Fund Funding opportunities within the National Recovery Funds to be identified in the different countries				
	Smart Specialization Strategies				

	3 regions per country and/or National Smart Specialisation Strategy (NSSS) (implemented via NOP/PON)	i.e. Smart and sustainable industry, energy and environment *(Water and waste treatment systems and technologies)*	regional	regional	1. Great Natural Resources : Forest, Sea and Space; 2. Health, Biotechnology and Food
	Funded projects				
European	**National**				
	Recovery Fund				

6. POSSIBLE CONSTRAINTS FOR CONDUCTING THE ALIGNMENT ACTIVITY

Building upon the following ERA-LEARN2020 key barriers to alignment at national level, **Water4All** still consider them relevant according to the following comments:

ERA-LEARN2020: lack of common understanding of what alignment means and how it can be achieved.

Water4All: the definition and explanation given in this deliverable seems more concrete and linked to ex-post analysis to facilitate a common understanding.

ERA-LEARN2020: insufficient inter-operability between national rules/procedures for funding and executing research.

Water4All: this barrier was extremely relevant in the first phase of WATER JPI, while it was substantially overcome and is now considered a (quite) well addressed issues.

ERA-LEARN2020: weak in-country coordination and consultations on strategic research priorities.

Water4All: this barrier is still relevant as coordination and consultations are mainly/often voluntary activities that resulted in lack of continuity and frequent turnover of the involved researchers and stakeholders.

ERA-LEARN2020: lack of sufficient national funding to support transnational coordination and joint programming.

Water4All: this barrier was alleviated by **Water4All** funding.

ERA-LEARN2020: Difficulty showing concrete results from alignment of research and innovation in the short-term.

Water4All: this barrier is valid. Although ERA-LEARN and WATER JPI elaborated good methodological approaches and instruments, their actual implementation and achievement of concrete results is still difficult to be confirmed.

7. WORKSHOP ON ALIGNMENT WITH NATIONAL AND LOCAL WATER-RELATED PROGRAMS

As a first step toward the development of the above-mentioned methodology, a specific workshop on "Alignment with National and Local Water-related programs" was organized in Rome, on January 23rd, 2025, at ISPRA premises.

The scope of the workshop was to gather stakeholders' views, inputs, and feedback on the alignment contents defined by the **Water4All** Partnership, sharing insights on:

- Effective harmonisation strategies.
- Identification of mechanisms for aligning national and regional programmes with **Water4All**.
- Tools and methodologies for assessing progress in alignment and fostering collaboration amongst different groups of actors in the R&I chain.

To this end, experts from Italy, Spain, Portugal and France were invited.

Below the methodology and main outcomes of the workshop are reported.

METHODOLOGY

Workshop participants (Fig. 1) were invited to actively engage by sharing their experiences and perspectives, reflecting on possible strategies that the **Water4All Partnership** should develop to harmonize and align Water Research and Innovation objectives across different scales and regional contexts. The opportunity to participate in hybrid mode was provided. To facilitate discussion and collect contributions, the Mentimeter application (Fig. 2) was used as an interactive tool, prompting participants with strategic questions (see Agenda, Annex I).

The 15 selected experts came from a pilot group of four countries—Italy, France, Spain, and Portugal—with the intention of expanding the survey to additional countries in the future research phases. These experts represented academia, research institutes, funding agencies, basin authorities, and water utilities. Participants were chosen based on recommendations from Task A.2.4 partners, and attendance was by invitation only. The selection process considered multiple criteria, including country/region, gender balance, areas of expertise, professional background, and level of seniority. In total, 20 participants attended the workshop, including representatives from the **Water4All Partnership** and the European Commission. To emphasize the significance of the event, the press was invited, allowing an extensive coverage on social media (Fig. 3, 4 and 5).

Ahead of the workshop, participants were provided with a concept note outlining the **Water4All Partnership's** objectives, the agenda, including the key questions to be discussed, and the list of attendees (Annex II).

Following an introductory presentation on the **Water4All Partnership** and the concept of alignment, the workshop was structured around two keynote presentations designed to foster an open and interactive plenary discussion.

The **keynote presentations** introduced two key discussion topics:

- Possible strategies for the **Water4All Partnership** to enhance the harmonization and alignment of Water Research and Innovation objectives across different scales and regions.
- Criteria for European, national, and regional public R&I calls related to water, with a specific case study from Portugal.

During the **roundtable session**, each expert shared insight based on their experience, providing an overview of research efforts in specific areas and how these align and interact with research programs in the four selected countries.

Finally, during several **open discussion sessions**, participants addressed direct questions on how the **Water4All Partnership** can effectively identify, integrate, and implement the priorities and needs of different territories and stakeholders within the water sector.

Fig.1 **Water4all** presentation during the workshop.

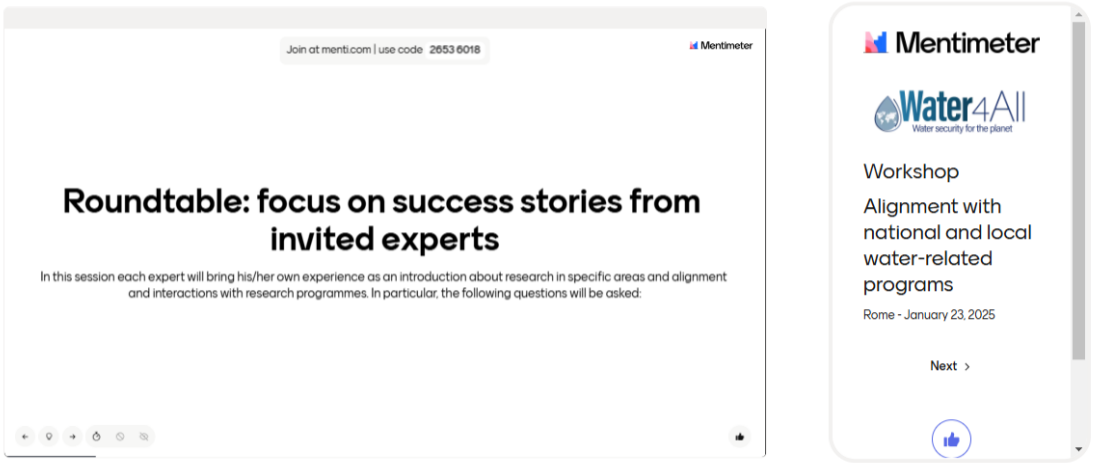

Fig.2 Sharing stakeholders' experience.

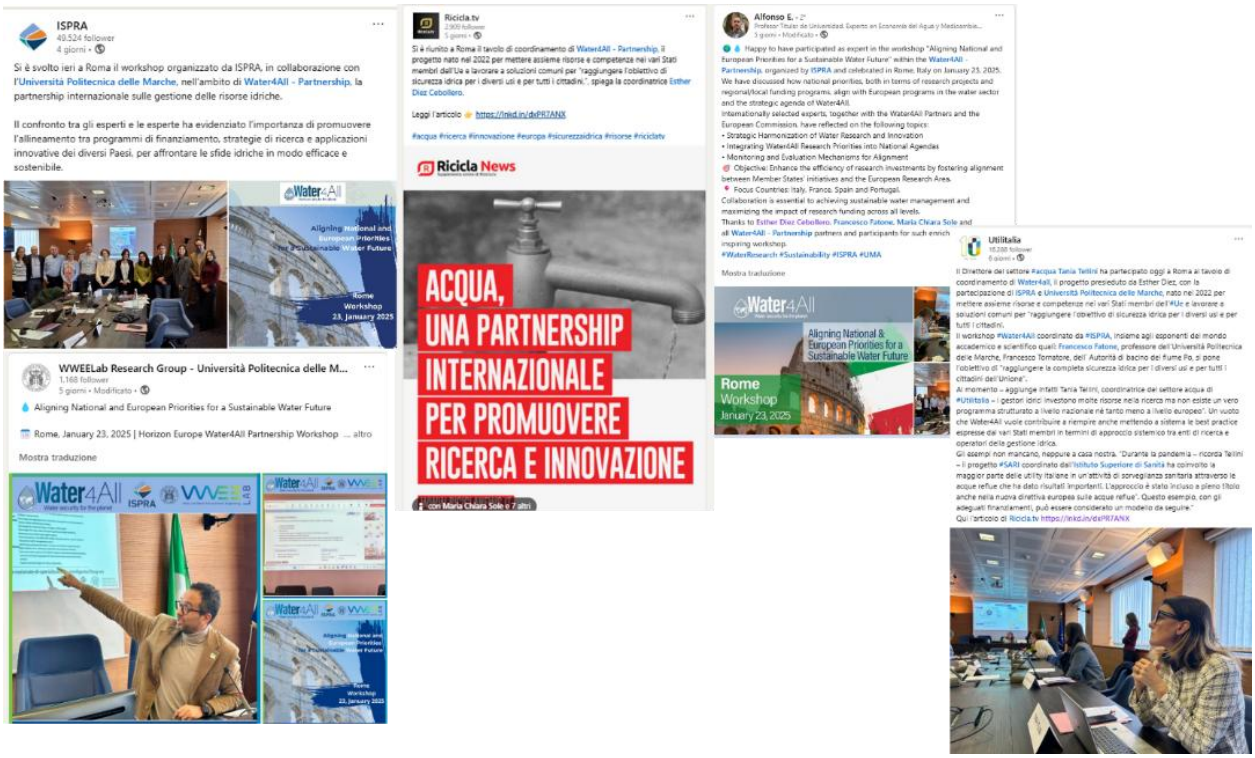

Fig.3 Social media posts on the Alignment workshop.

https://www.riciclanews.it/eventi-e-conferenze/acqua-una-partnership-internazionale-per-promuovere-ricerca-e-innovazione_34945.html

Fig. 4. E-magazine article on the event.

https://www.youtube.com/watch?v=tlf7VcqRKFw

Fig. 5 Event news in the web Ricicla.tv

KEY OUTPUTS OF THE WORKSHOPS

The following pages summarize the main results of the different sessions of the workshop.

KEYNOTE PRESENTATIONS

Keynote Presentation: The Role of Alignment in Strengthening Water Research Cooperation

Strategic importance of harmonization across Member States

Professor **Francesco Fatone** (UNIVPM) in his keynote, highlighted the urgent need to accelerate the scaling-up of potential solutions within public water sector utilities. While water-related challenges are crucial, they often remain transversal rather than central in broader policy discussions.

Alignment is not a new topic—it has been addressed multiple times in various contexts. However, implementing alignment strategies remains a challenge, especially in the fragmented governance and management of the water sector. This fragmentation, including financial constraints, complicates the application of ERA-LEARN tools for effective coordination. Despite these difficulties, ERA-LEARN has already defined key actions that can serve as a foundation for progress. One of the suggested strategies is a **bottom-up approach** for aligning research programs at the **Basin Authority level**. **A logical starting point for alignment could be synchronizing timelines across different initiatives.**

Currently, many research projects in the sector have achieved a relatively high technical maturity level (TRL - Technology Readiness Level - 9). However, their Legislative Readiness Level (LRL), Organizational Readiness Level (ORL), and Societal Readiness Level (SRL) remain significantly lower. **This gap must be addressed, as**

public trust in these innovations is still lacking, and adoption remains a challenge. Alignment efforts should focus on improving these aspects to ensure that research outcomes translate into real-world impact.
Another major issue is the difficulty in defining clear priorities. However, it is important to emphasize that alignment does not preclude harmonization across different organizational strategies. **Instead, it should serve as a tool to facilitate more effective coordination while respecting institutional diversity.**
By fostering better alignment and focusing on key barriers—legislation, governance, and public trust—we can create an enabling environment for the large-scale adoption of innovative water solutions. The time to act is now, and our efforts must be collective and strategic.

Keynote Presentation: Strategic Harmonization of Water Research and Innovation Objectives

Criteria to be used in European, national and regional R&I public water related calls.

Guido Schmidt (Fresh Thoughts Consulting GmbH) shared his experience with EU DG REGIO[6] (European Commission's Directorate-General for Regional and Urban Policy) in tackling water scarcity in Portugal. The request originated from Portugal's appeal for additional funding to address this pressing issue. However, DG REGIO lacked sufficient expertise on how to respond effectively. To bridge this gap, a set of **strategic recommendations** was developed, focusing on key areas such as **water pricing, reuse, and desalination**. Following **50 interviews**, several critical lessons emerged:

1. Gaps in Water Pricing and Cost Allocation
A major challenge lies in understanding the economic implications of water solutions. Key questions remain: Who should bear the costs? When is the legal framework ready to regulate water pricing? These aspects must be clarified to ensure sustainable financial models.

2. The Added Value of Water Use
Understanding why and how water is used is crucial for decision-making. For instance, its application in irrigation highlights the economic and societal importance of water. These considerations must be factored into policy development.

3. The Need for Collective Action
Many current solutions focus on individual interventions without addressing systemic water challenges. Collective action is often overlooked but is essential for meaningful and lasting impact. Bringing stakeholders together is crucial for coordinated and effective water management.

4. Lack of Recognition of Failures in Research
Research outputs tend to highlight success stories while failing to document challenges or unsuccessful attempts. There is a lack of portfolio or cluster assessments, making it difficult to aggregate and learn from research results. A more comprehensive evaluation approach is needed.

5. Overlooking Trade-offs and Societal Readiness
Many projects emphasize the benefits of water reuse but fail to account for downstream impacts. Similarly, issues related to Managed Aquifer Recharge (MAR) and water quality are often neglected. Trade-offs are rarely addressed in research, contributing to low societal readiness for adoption. While technological challenges are widely explored, social and governance issues receive far less attention. Future funding calls and supported projects should explicitly incorporate these dimensions.

OPEN DISCUSSION

Enhancing Alignment in Water Research and Policy: Challenges and Opportunities

[6] DG REGIO develops and carries out the Commission's policies on regional and urban policy.

The Key Points of the open discussion on Enhancing Alignment in Water Research and Policy can be summarized as follows:

- **Successful Research-Policy Alignment**
  - The work led by Guido Schmidt serves as a model for aligning research with policy and could be replicated in other countries.
  - The **FP10 Framework Programme** and initiatives like **Water4All** offer opportunities to address similar challenges.
- **Challenges in Research Transparency**
  - Public administrations face administrative barriers in engaging with research projects.
  - Researchers and private sector actors are often reluctant to publish **negative results**, limiting learning opportunities.
  - Funding agencies and the **European Commission** should promote transparency in research outcomes.
  - Horizon Europe projects and a dedicated study on research failures could provide **valuable insights**.
- **Impact Assessment and Stakeholder Participation**
  - **Water4All** uses impact assessment tools to evaluate project effectiveness and identify failures.
  - Questionnaire fatigue is a challenge, necessitating better integration of impact assessments into strategic alignment efforts.
- **Bridging Gaps and Fostering Collaboration**
  - Identifying gaps and adopting a **collaborative approach** is key to addressing water challenges.
  - The **DG REGIO** model could help improve alignment across projects and policy initiatives.
- **Strengthening the Role of Stakeholders**
  - **Water management institutions and authorities** should play a stronger role in designing and implementing Strategic Research and Innovation Agendas (**SRIA**).
  - **Capacity building** is crucial for ensuring the long-term success of practical solutions.
  - Research evaluations should assess whether outcomes lead to **real-world applications**.
- **Engaging End-Users and Legal Frameworks**
  - **Collective action** is often proposed but may not always be suitable for every context.
  - End-user involvement, such as **irrigation associations**, is essential.
  - **Water authorities** play a crucial role in establishing the necessary **legal frameworks** for effective implementation.

ROUNDTABLE SESSION

During the roundtable session, each expert provided his/her experience regarding challenges and opportunities in Water Governance and Research. Below the overview of the four participating countries is summarized.

Italy

Fragmentation in Water Governance

Water governance in Italy is characterized by a high degree of fragmentation, highlighting the need for greater collaboration between researchers and policymakers. The alignment of basin districts within national territories is considered a necessary step before expanding coordination efforts across multiple states. Efforts are already being made to strengthen relationships with key organizations, such as the International Network

of Basin Organizations (INBO). In this context, the 22nd Europe-INBO International Conference is scheduled to take place in Parma, Italy, from May 19th to May 23rd, 2025.

Learning from Regional Approaches

Despite regional differences in governance, the underlying challenges remain similar, making it essential to learn from successful strategies implemented elsewhere. Research funding is generally allocated to enhance knowledge on existing issues, with annual budgets typically ranging between €400,000 and €600,000. At the national level, total investments in water research exceed the funding provided by the Ministry for joint calls, demonstrating the critical role of research-driven initiatives.

Water Utilities' Contribution to Research

Water utilities play a significant role in research efforts across Italy. Various companies, in collaboration with universities and public research institutes, carry out studies that are often highly localized. Key research priorities include climate change, micropollutants, and new EU regulations. Major challenges in water research are:

- The absence of **a national framework for integrating and coordinating research activities**. No structured plan exists to align research with practical applications, nor is there a **clear list of priorities** to guide efforts across different sectors.
- The **lack of a shared platform** for communicating research findings limits both visibility and accessibility. Without a national plan to integrate research into practice, access to project funding remains **unequal**, often benefiting certain stakeholders while excluding others.

A **national platform** for sharing and disseminating research results is urgently needed. Ensuring that research findings are widely accessible would support **policy development and the practical implementation** of water sector solutions. In Italy, in theory, investment in innovation is planned to come from a percentage of water tariffs (although these tariffs are low).

Portugal

Stakeholder Involvement and Research Expertise

Stakeholder participation is considered essential, despite the Portuguese Environment Agency's lack of research expertise. A strong connection exists between researchers and implementers, ensuring research findings are applied in practice.

Funding and Bureaucratic Challenges

Resilience and recovery funds are perceived as highly politicized and not allocated to research activities. Limited dedicated research calls make alignment with other countries difficult.

Public administrations face bureaucratic barriers when engaging in research projects, requiring special authorizations from the President or even the Minister.

Research Funding and Alignment Efforts

Replicating the Italian model for EU fund management is considered challenging, potentially hindering alignment. The Portuguese Environment Fund focuses on infrastructure, with few opportunities for dedicated research funding. Research may sometimes be included in service contracts, but a structured alignment strategy is lacking. Portugal seeks to learn from international research practices to improve alignment and funding mechanisms.

Spain

Role of Water Utilities and Research Engagement

Spain water utilities do not engage in research activities, as their primary role is to ensure sufficient water supply. While they are not opposed to using innovative technologies, they require full proof of their effectiveness before implementation. Uncertainty regarding quality requirements often leads to hesitation in adopting new technologies. Additionally, various legal and environmental challenges further complicate the process.

Challenges in Research Implementation

A significant issue is that many research funding calls do not support the implementation of results, such as civil works or engineering activities. Instead, implementation is expected to be handled by a separate organization, which does not always function effectively. For this reason, there is a need to explore not only research actions but also practical solutions for implementation challenges.

Limitations in Research Funding and Participation

In Spain, river basin authorities lack dedicated research budgets and are often reluctant to participate in R&I projects due to uncertainty about financial and human resources. Traditional research projects do not provide sufficient security, leading to high failure rates. The Spanish Recovery Plan is primarily focused on digitalization efforts in water, energy, and the nexus approach. However, only water utilities and problem holders are eligible to apply for these funds, limiting broader participation in research and innovation initiatives.

France

Role of Mirror Group and Research Engagement

In France, mirror groups—including representatives from the Ministries of Ecology, Research, Agriculture, and national research agencies with similar levels of expertise—facilitate the alignment of national programs. However, challenges persist, such as the limited participation of researchers in strategic discussions and language barriers. It is emphasized that research strategies should consider political constraints and the needs of decision-makers. The timelines of politics differ from those of research.

Limitations in Research Funding and Participation

Despite strong coordination between national programs (such as OneWater) and the availability of significant funding and initiatives at the national level, there is a lack of awareness and interest regarding the importance of EU programs like **Water4All**. Additionally, fragmentation among national agencies often results in delays when seeking to provide a unified response at the national level.

FOCUS ON STAKEHOLDERS' PERPSPECTIVE

Achieving the alignment: the vision of POLICY PROVIDERS

Alignment Through European Legislation and Strategic Agendas

- The recast Urban Wastewater Treatment Directive (UWWTD) is largely based on research outcomes related to circular economy and urban water management, though implementation challenges remain.
- The SRIA of Water JPI and **Water4All** have played a key role in guiding research funding and strategic water plans in France (e.g., Inrae, BRGM) and within ANR's funding activities.
- JPI initiatives have helped align protocols and procedures, but efficient funding allocation remains a challenge.
- The S3 (Smart Specialisation Strategy – the European Commission's 2014-2020 community programming for structural funds) does not explicitly mention the water sector. Therefore, it is essential to map the priorities of the S3 strategy. Consequently, data sharing should be mandatory (e.g. Veneto region in Italy).

Institutional Roles and Challenges

- Some respondents are not policy providers but observe a lack of effective communication between policymakers and researchers, particularly in Italy.
- District authorities coordinating multiple regions and water operators focus on synergies to enhance policy alignment.

Factors Influencing Alignment Success

- Alignment varies depending on the project, involved actors, and available human, technical, and financial resources.
- A major limitation is the absence of a clear legal framework, which hinders systematic alignment efforts.

- Some estimate that only 20% of alignment objectives have been achieved, and overall, alignment remains weak.

Strategies for Improving Alignment

- Alignment efforts have been supported through public consultations, stakeholder discussions, technical working groups, and international collaborations (e.g., in Ethiopia with the Ministry of Water and Energy and the African Union).
- National initiatives aim to integrate management plans and incorporate bottom-up territorial needs into research strategies.
- Broader funding calls that cover all project costs until implementation by end users is necessary to improve practical outcomes.

Achieving the alignment: the vision of the IMPLEMENTERS

Participation in Institutional and Research Networks

- Utilitalia takes part in key institutional discussions on water resource planning and collaborates with universities and national research centers. Members of Utilitalia invest heavily in research, operate in-house research centers, and promote networks of companies to foster research initiatives.
- Several territorial collaborations exist between water managers and universities, but research results should be shared more widely through open platforms.

Limited and Indirect Consultation

- Many respondents indicate that they have not been directly consulted for alignment purposes, except for requests for data on funding, success rates, and investment distribution.
- Some have participated in **mirror groups** or mapping exercises (e.g., Water JPI, **Water4All**), but these engagements were infrequent and lacked follow-up on impact and results.
- Researchers are often involved only to provide information for decision-making processes rather than actively shaping alignment strategies.

Examples of Alignment Efforts

- A nationwide shared research initiative was conducted by ISS during the COVID-19 pandemic, leading to the establishment of Italy's first national health surveillance network through wastewater.
- A notable case is the DG REGIO initiative (Guido Schmidt report), which provided insights into alignment efforts.
- Alignment efforts also arise from national directives requiring changes in practices and the need to educate decision-makers on scientific matters.

Challenges and Needs

- There is no shared national research program, which is urgently needed to address climate change impacts and new regulations on water resources.
- Key alignment challenges include:
    - Bridging scientific and political timelines to ensure research is effectively integrated into policy.
    - Educating decision-makers on scientific findings to improve policymaking.
    - Balancing stakeholder independence while fostering cooperation.
- Alignment processes should optimize funding and time management to ensure more effective research implementation.

FOCUS ON WATER4ALL STRATEGY FOR ALIGNMENT

WATER4ALL'S STRATEGIES TO BE DEVELOPED TO ALIGN ITS RESEARCH PRIORITIES WITH DIVERSE REGIONAL, NATIONAL AND LOCAL WATER NEEDS.

Support for Researchers and Research Prioritization

- Support researchers beyond funding, including engineering, construction, and other areas.
- Emphasize and prioritize applied research topics.

- Require synthesis reports on past research and the state of the art at the beginning and end of projects.

Stakeholder Collaboration and Engagement

- Strengthen collaboration among stakeholders at all levels (policy, funding, R&D, innovation).
- Ensure stakeholder participation across multiple sectors, with an implementation plan and follow-up.
- Directly involve the private sector in projects and enhance synergies between public, private, and academic sectors, from local to global levels.
- Use private-sector case studies and link them to UN studies (e.g., UNESCO - **Water4All** MoU).
- Involve water utilities in defining needs through web platforms, national workshops, and NGO engagement.

Communication and Dissemination Strategies

- Adapt communication to the specific needs of the private sector.
- Improve communication, make proposals more accessible, and involve local associations for dissemination.
- **Water4All** provides opportunities to define research priorities; effective communication strategies are essential.

Policy Alignment and Funding Strategies

- Strengthen collaboration with DG REGIO and S3 strategies to prioritize water-related issues.
- Align different funding sources with research and promote policy actions to engage fund managers at regional and EU levels.

Knowledge Sharing, Assessment, and Strategic Planning

- Conduct focused mapping to identify needs, priorities, challenges, and opportunities while engaging stakeholders.
- Assess the impact of previous projects at local, national, and regional levels.
- Ensure post-project business continuity.
- Continue developing knowledge-sharing platforms.
- Consolidate best practices, raise awareness, and provide structured approaches for alignment and harmonization.
- Utilize the WoLL network to provide feedback for the strategic agenda.

Problem-Solving and Innovation

- Cluster problems based on solution readiness levels.
- Develop strategies for addressing water scarcity, focusing on water reuse, new technologies, and riparian recovery.
- Understand territorial differences, as common problems may not always have common solutions.

WATER4ALL JOINT TRANSITIONAL CALLS FOR PROPOSALS TAILORED TO THE R&I NEEDS OF DIFFERENT STAKEHOLDERS IN THE WATER SECTOR

Funding and Research Development

- Calls for proposals should fund the entire development process of technology, from inception to implementation, ensuring its usefulness for citizens.
- Modify funding schemes to better support research and innovation.
- Adapt funding approaches to sector-specific needs, taking inspiration from models like ESA's approach in space science.
- Increase focus on applied research.

Stakeholder Engagement and Collaboration

- Broaden the audience of informed stakeholders to ensure continuous feedback and a better understanding of territorial needs.
- Actively engage stakeholders, industry, and participants at all levels throughout the design and implementation process.

- Ensure a balanced involvement of different stakeholders in proposals.
- The **Water4All** joint call should encourage the participation of partners beyond research institutions, fostering interaction and cooperation.
- Integrate stakeholder input before releasing calls by identifying specific needs and potentially opening calls for public comments through funding agencies.

Regulatory and Strategic Alignment

- Address regulatory challenges with innovative, more sustainable, and efficient solutions.
- Ensure open discussions about competing priorities beforehand to uncover concerns and expectations that may influence decisions and involvement in calls.
- Consider the strategic importance of research themes, their potential impact, and resource requirements, ensuring alignment with broader priorities.
- Calls should address concrete problems and needs while ensuring compliance with regulations and European directives.

Implementation, Practical Considerations, and Impact

- Guarantee that problem-solving aligns with the timelines required by industrial plans of water utilities and authorities.
- Require research-performing organizations to demonstrate proven, on-field experience.

INTEGRATING WATER4ALL RESEARCH PRIORITIES INTO NATIONAL AGENDAS

STRENGTHENING THE LINK BETWEEN POLICY, SCIENCE, AND PRACTICE: STRATEGIES FOR ENHANCING COLLABORATION AND RESEARCH UPTAKE IN WATER4ALL

Stakeholder Engagement and Collaboration

- Encourage collective action among all stakeholders involved in the projects.
- The **Water4All** approach must be well understood by all relevant actors.
- Ensure balanced participation of diverse stakeholders, including problem owners. Integrate socio-economic dimensions, resource adoption strategies, and market implementation while ensuring follow-up on project execution.
- Promote co-funded R&D projects that require collaboration among the public, private, and research sectors. These should include requirements for practical deployment and measurable impact as key evaluation criteria.
- Facilitate interactions between researchers and end-users of technology.
- Develop local communities of practice involving all stakeholders and organize seminars dedicated to the dissemination of innovative solutions to practitioners.
- Organize thematic events, hackathons, and business forums to facilitate matchmaking between problem owners (e.g., municipalities or water utilities) and solution providers.
- Offer capacity-building workshops to help participants from different sectors understand each other's priorities, constraints, and operating procedures.
- Mirror groups are highly valuable and should receive greater institutional recognition.

Strategic Approach to Innovation and Research

- Share best practices and successful projects from other regions and countries to demonstrate the importance of engagement.
- Ensure all stakeholders have a clear understanding of the strategic importance of key themes, their potential impact, and resource requirements.
- Policymakers could introduce a mandatory section in legislation requiring an assessment of how research project results have been considered and to what extent they have been applied.
- Share concrete and evaluated results of projects.
- Strengthen connections with ongoing projects.
- Policymakers and stakeholders can be more effectively engaged by combining problem-solving with novel research to advance scientific knowledge. Calls should integrate both elements.

Funding and Policy Support

- Establish shared funding mechanisms for innovation.
- In Portugal, there is little tradition of private-sector involvement in research. The FCT only funds 50% of the total costs for their participation.
- Establish regional water innovation clusters and living labs where public agencies, researchers, and private companies can test, co-create, and scale water solutions in real-world settings.
- Collaborate with regulators and other bodies to develop standards and certifications for innovative water solutions, making it easier for the private sector to adopt them.
- Identify relevant projects, living labs, and working groups at various levels.

Design and Consultation in Project Implementation

- Conduct consultations with local stakeholders during the design phase of calls.
- The approach is primarily top-down, with expert groups determining priorities (even based on EU topics), followed by public consultations that often see limited participation.
- Ensure direct involvement in the design of **Water4All** calls and facilitate stakeholder participation in project implementation.
- The model being developed in Italy through the Basin Authorities could serve as a viable solution in other contexts.

ENGAGING POLICYMAKERS AND STAKEHOLDERS IN EMBEDDING WATER4ALL RESEARCH PRIORITIES INTO NATIONAL AND REGIONAL AGENDAS: MECHANISMS AND STRATEGIES

Regulatory and Institutional Mechanisms

- Propose a European model of authority that considers the need for systematization among all the components involved, as a potential solution to the problem.
- Propose a single European District Authority model. The WFD introduced Districts but did not clarify how District Authorities should be organized.
- Establish country-level committees that include policymakers, local authorities, researchers, and civil society representatives. These committees can act as intermediaries to align **Water4All** research with national priorities.
- Policy-science advisory boards: Ensure the adequate integration of problem holders/solution users in the management structure and throughout the different stages of projects.

Capacity-Building and Engagement

- Capacity-building workshops: Organize training sessions for policymakers and local authorities on the use of **Water4All** research outputs, tools, and decision-support systems.
- Ongoing engagement throughout the **Water4All** SRIA development process: Provide capacity-building to support continuous engagement.
- Build relationships and networks: Foster relationships and networks to support ongoing collaboration and engagement.

Stakeholder Involvement and Communication

- Stakeholders need to understand "what's in it for them" because time is a precious resource. Ensuring the visibility of active stakeholders in communication strategies is a good starting point.
- Mirror group: Mirror groups should be constructed after a call to select relevant participants; more than 15-20 participants might be too dispersed.
- Link with ongoing national committees and working groups: Align and connect with national committees and working groups to integrate **Water4All** research at the local and national levels.

Supporting Researchers and Stakeholder Collaboration

- Track records of researchers who have supported stakeholders in overcoming challenges can help build credibility and trust.

INTEGRATING NATIONAL, REGIONAL, AND PRIVATE SECTOR PRIORITIES INTO WATER4ALL'S STRATEGIC AGENDA FOR CONTINUOUS IMPROVEMENT AND ALIGNMENT

Stakeholder Engagement and Collaboration

- Consultation workshops, active participation in management structures, and flexible financing schemes to ensure implementation and follow-up.
- Having **Water4All** experts with experience working closely with the policy and private sectors, collecting contributions and integrating them into the SRIA.
- Link working groups and ministerial commissions already in place in different countries.

Aligning Priorities and Research Agenda

- Map national and regional water priorities, as well as private sector sustainability goals, against **Water4All**'s research agenda. Identify and address areas of overlap or divergence.

Complexity of Management Models

- It is not easy to answer because the management models of the resources, and consequently the research needs of individual stakeholders, are very different.

A notable example of integrating research priorities with national agendas is the French PPP collaboration through the France 2030 Hydrology Space initiative. This collaboration works effectively because it provides funding for both companies and local actors. The initiative has a budget of 5.5 million euros over three years, and stakeholders were involved from the very beginning. The projects are designed to be adaptable to different local realities, making them not a one-time effort, but rather ongoing, sustainable solutions. The Space Agency serves as the central point of contact for companies, ensuring a high level of political support for the project. The centralized approach means that the ministry acts as the sole interlocutor for stakeholders, streamlining communication and decision-making. Companies involved in the initiative have a clear understanding of the expected outcomes, along with opportunities to export new products to international markets. An active platform has been established for collaboration, and there is optimism that this model can be replicated across other domains. A key to the success of this model is ensuring the active participation of companies by demonstrating that there are local actors (future clients) involved and highlighting export opportunities. Additionally, the use of Copernicus data plays a crucial role in monitoring water quality and quantity. Satellite data, such as from Copernicus and Pleiades Airbus, is especially valuable for mapping surface water, providing high-resolution insights into water bodies. The private sector's participation is driven by their interest in innovation, although many companies face challenges accessing funding through traditional programs like Horizon due to certain limitations in funding mechanisms. This is why many French companies actively participate in ESA calls.

DEVELOPING A FRAMEWORK FOR CONTINUOUS IMPROVEMENT

Overview of the tools Water4All is developing to assess alignment:

First mapping exercise (Ana Mendes, EVORA) and
systematic analysis (Isavella Georgiou, UNIVPM) as tools to assess the alignment.

The last session of the workshop was dedicated to the tools to assess alignment that are currently under development within the activities of the **Water4All** Partnership. Ana Mendes (EVORA University) and Isavella Georgiou (UNIVPM) presented, respectively, the mapping exercise and the systemic analysis that are being conducted to assess funding instruments and identify gaps. These efforts aim to enhance the impact of research by ensuring alignment across the entire R&I chain and promoting synergy among projects, funding sources, and end-users.

At the end of the presentation more inputs were collected by the experts. They are summarized below.

- **Additional information to be incorporated into the Water4All mapping exercise to ensure its relevance and usefulness for funding organizations, policymakers, water management authorities, and private sector stakeholders.**

Questionnaires and Data Collection

- Very long questionnaires can sometimes be counterproductive, as the pursuit of perfection may hinder effectiveness. More focused and directed questionnaires are necessary, both in terms of the type of information requested and the type of respondents targeted.

Access to Information

- National contact points should be established to facilitate access to detailed information.
- Relevant information needs to be easily accessible to all stakeholders.

Project Relevance and Strategy Alignment

- The project should be aligned with the S3 strategy.
- It is important to determine whether the project is a scale-up or a follow-up of previous cases, and to identify any connections with other ongoing or already implemented projects.
- Additionally, the project duration should be clearly defined.

Stakeholder Involvement and Participation

- The percentage of newcomers among the partners should be quantified, and the level of participation of stakeholders in projects must be assessed.
- It is important to evaluate whether the same partners are consistently involved.

Technical Support and Collaboration

- A mapping of the working groups, commissions, and expert groups that provide technical support to public administrations in different countries should be created.

Social Impact and Long-Term Sustainability

- Clear pathways should be established to ensure social impact, marketization, and capacity-building needs (competencies).
- A follow-up plan is necessary to guarantee long-lasting implementation and continuity of the project.

- **Criteria and indicators to prioritize when evaluating the impact of a funded project.**

Project Impact and Deliverables

- Direct impacts of the pro, such as outputs (publications, communications, reports, training, models/prototypes/patents). Indirect impacts, including contributions to the call's objectives and improvements in quality of life.
- The deliverables should provide solutions to the identified issues, with an emphasis on their replicability and potential for effective deployment.
- Replications – potential for replication of the project in other contexts.

Cost-Benefit Analysis and Solution Effectiveness

- Evaluating the project's success involves a cost-benefit analysis, considering the benefits of implementing a solution in water utilities.
- The project's efficiency, efficacy, and added value in the market are key indicators of its potential impact.
- The relevance of the solution to the affected population and its environmental impacts, including the valorisation of ecosystem services, should be closely monitored.

Partnership and Stakeholder Involvement

- Cost-effectiveness – Types of partners involved (research centers, private and public sectors).
- Involvement of problem owners, existence of a capacity-building plan, and a marketization plan.
- The type of partnership and the heterogeneity of objectives among partners.

Project Reach and Economic Impact

- The target population that can benefit from the project and the economic impact the project can generate.

Monitoring and Indicators

- SG6-related indicators – specific metrics related to the strategic objectives to which the project is contributing.

DEVELOPING A CONTINUOUS IMPROVEMENT FRAMEWORK & FUTURE DIRECTIONS FOR THE ALIGNMENT OF WATER4ALL

Recommendations for Improving Alignment

- Facilitate dialogue between various actors to ensure continuous communication and collaboration.
- Create and maintain a contact group through a platform to foster ongoing engagement and information exchange.
- Encourage policymakers to formally consider the results of the alignment, ensuring that the outcomes are integrated into future strategies and decision-making.
- Strengthen networking opportunities, enabling stakeholders to build connections and share knowledge beyond the meeting.

Ensuring Continued Collaboration Post-Meeting

- Continue networking to maintain momentum and build relationships.
- Establish and sustain a contact group through a platform, providing a structured way for participants to stay connected and engaged in future activities.

8. CONCLUSIONS

Key Takeaways from the Workshops

The workshops highlighted the urgent need to improve coordination in water research to ensure that promising solutions move beyond the technical stage and become real-world applications. While many projects have reached high levels of technological maturity (TRL 9), they still face major hurdles in terms of legislation, governance, and societal acceptance. Without addressing these barriers, the adoption of innovative water solutions will remain slow and fragmented.

A key challenge is that research and policy often operate on different timelines, making alignment difficult. Additionally, while alignment doesn't mean strict harmonization, it should help create better coordination across different governance levels while respecting institutional diversity. One promising approach is to start at the Basin Authority level, synchronizing research initiatives and priorities to ensure a more cohesive strategy.

Another critical issue is the lack of transparency when it comes to research failures. Too often, only success stories are shared, which makes it difficult to learn from past mistakes and refine future approaches. Funding agencies and policymakers should encourage a more open discussion on challenges and setbacks to improve the effectiveness of research efforts.

Country-Specific Challenges and Lessons Learned

Each country faces unique challenges when it comes to aligning water research with policy and practice:

- **Italy** struggles with fragmented governance, making it difficult to coordinate research efforts at a national level. A shared research platform could help bridge this gap, ensuring that findings are accessible and applicable.
- **Portugal** faces bureaucratic obstacles that limit public administration engagement in research, and dedicated funding for water research remains scarce. Learning from other countries' best practices could help improve alignment.
- **Spain** has a cautious approach to adopting new water technologies, as utilities require full proof of effectiveness before implementation. Moreover, funding mechanisms do not always support the transition from research to real-world application.
- **France** has a relatively strong national coordination framework, but researchers are not always involved in strategic discussions, and EU program awareness and participation in some thematic areas are limited. Bridging the gap between research and policymaking is crucial.

How to Improve Alignment

To overcome these challenges, several key actions were identified:

- **Encouraging bottom-up approaches**: Involving local authorities and basin managers in shaping research priorities can improve coordination and effectiveness.
- **Increasing transparency in research**: Documenting and sharing both successes and failures will help build more robust strategies.
- **Enhancing collaboration among stakeholders**: Policymakers, researchers, and end-users (such as water utilities and irrigation associations) need to work more closely together.
- **Developing open platforms for knowledge sharing**: A national or EU-wide system for disseminating research findings could support better policy integration.
- **Ensuring more comprehensive funding**: Many research projects lack financial support beyond the initial research phase, preventing large-scale implementation. Expanding funding to cover the entire research-to-application cycle would help bridge this gap.

Moreover, currently there is a lack of understanding of the extent to which the thematic areas outlined in R&I programmes align with national priorities set out in National Recovery Plans or S3 strategies. To address this knowledge gap, a comprehensive analysis will be conducted by systematically comparing these documents with the **Water4All** SRIA.
This approach will provide us with valuable insights into whether our SRIA truly reflects and responds to the needs of Member States.

In conclusion, achieving effective alignment in water research requires a shift in mindset—from fragmented, isolated efforts to a more integrated, transparent, and collaborative approach.

With collective action and strategic planning, the sector can move towards real, impactful solutions that address today's water challenges.

9. NEXT STEPS

The alignment activity will continue during the Phase 2 of the **Partnership Water4All**.
The next steps can be summarized as follows:

- Proceedings of the workshop will be shared with participants.
- The deliverable D1.10 *Progressing towards alignment aims and objectives,* with the methodology to be followed, will be submitted by the end of February 2025.
- The mapping activity and the systematic review will be realized within the next year to feed the next deliverable D1.24 *Assessing progress towards alignment in Member States and associated countries*, to be completed by June 2026.
- Networking and collaboration opportunities will be valorised in the coming months (i.e. 22nd Europe-INBO International Conference, Parma- Italy, 19th-23rd May 2025) in order to foster the links already created with this first workshop and create new ones for the purposes of the alignment activity.
- Further possibilities on how continue and broader the alignment activity during the Phase 3 of **Water4All** will be discussed in the coming meetings.

ANNEX I. PROGRAMME OF THE WORKSHOP

Meeting Venue

The Italian Institute for Environmental Protection and Research (ISPRA)

Main entrance: Via Vitaliano Brancati 48, 00144 Rome

Meeting room: Sala SNPA, 7th floor, Via Vitaliano Brancati 60 – **ONLINE CONNECTION:** https://urly.it/313htj

Registration: ***Please first register with your ID at the main entrance, you will be then directed to the meeting room which is in the building just in front of the main entrance.***

09:00 – 09:30 | Registration and Welcome Coffee

09:30 – 09:45 | Welcome and tour de table
(ISPRA representative & All)

09:45 – 10:00 | Water4All in a nutshell
Overview of Water4All and the importance of alignment in water research and innovation
Esther Diez Cebollero (ANR) and Maria Chiara Sole (ISPRA)

10:00 – 10:15 | Keynote Presentation: The Role of Alignment in Strengthening Water Research Cooperation
Strategic importance of harmonization across Member States
Francesco Fatone (UNIVPM)

10:15 – 10:30 | Keynote Presentation: Strategic Harmonization of Water Research and Innovation Objectives
Criteria to be used in European, national and regional R&I public water related calls
Guido Schmidt (Fresh Thoughts Consulting GmbH)

10:30 – 11:00 | Roundtable: focus on success stories from invited experts
In this session each expert will bring his/her own experience as an introduction about research in specific areas and alignment and interactions with research programmes. In particular, the following questions will be asked:

- For Policy providers: how alignment has been achieved and to what extent?
- For Implementers: to what extent you have been consulted for alignment purposes?

11:00 – 11:30 | Coffee Break

11:30 – 12:30 | Open discussion: focus on Water4All strategy for alignment
Discussion will continue with the following questions:

- What strategies can Water4All develop to align its research priorities with diverse regional, national, and local water needs while maintaining coherence with broader European goals and ensuring the private sector's active role in delivering context-specific solutions?

- How can Water4All's joint calls for proposals be designed to meet the water R&I needs of diverse groups including research institutions, water management authorities, water utilities and private companies?

12:30 – 13:30 | Lunch Break

13:30 – 14:15 | Open Discussion: Integrating Water4All Research Priorities into National Agendas

Discussion will focus on the strategies for Enhancing Integration at National and Regional Levels with the following questions:

- How does each country ensure a link between policy, science and practical application? What strategies or actions can Water4All implement to foster stronger collaborations between public sector organizations, research centres, and private entities, thereby improving the uptake of research outcomes and facilitating more effective policy integration?
- What mechanisms can be used to engage policymakers, local authorities, and other stakeholders in embedding Water4All research priorities into national and regional agendas? (i.e through Mirror groups if they exist in your country and are useful).
- How can national and regional experiences as well as priorities from the private sector be effectively fed back into Water4All's strategic agenda to ensure continuous improvement and alignment?

14:15– 15:00 | Presentation: First mapping exercise and systematic analysis as tools to assess the alignment

Ana Mendes (EVORA) and Isavella Georgiou (UNIVPM)

Open discussion: Discussion will focus on developing a Framework for Continuous Improvement**:**

- What types of additional information should be included in Water4All's mapping exercise to ensure that it is valuable not only for funding organisations but also for policymakers, water management authorities, and private sector stakeholders?
- Which kind of criteria and indicators you consider more important when evaluating the impact of a project?

15:00 – 15:15 | Coffee Break

15:15 – 15:45 | Open discussion: Future Directions for Water4All Alignment

Open discussion on future goals, challenges, and opportunities. Next steps.

- Do you have any specific recommendations for improving alignment?
- How can we make sure after this meeting we continue our activity together?

15:45 – 16:00 | Summary and Closing Remarks

Recap of key insights and action points.

Appreciation and outline of follow-up activities.

ANNEX II. LIST OF PARTICIPANTS

Attendees per country

NAME	INSTITUTION	COUNTRY	ON SITE/ ONLINE
AURORE DELAHAYES	Ministry of Ecological Transition	FRANCE	In presence
ESTHER DIEZ CEBOLLERO	French National Research Agency (ANR) - Water4All member Pillar A Leader	FRANCE	In presence
FRANCESCO TORNATORE	Po River Basin Authority	ITALY	In presence
TELLINI TANIA	UTILITALIA	ITALY	In presence
MARIA CONCETTA TOMEI	IRSA CNR	ITALY	Online
STEFANO FAZI	IRSA CNR	ITALY	In presence
FRANCESCO FATONE	Polytechnic University of Marche (UNIVPM) - Alignment activity Leader	ITALY	In presence
ISAVELLA GEORGIOU	Polytechnic University of Marche (UNIVPM)	ITALY	Online
MARIA CHIARA SOLE	ISPRA -Water4All member Alignment activity Leader	ITALY	In presence
VITTORIA LATERZA	ISPRA -Water4All member Pillar A partner	ITALY	In presence
ANDRÉ MATOSO	Alentejo River Basin Authority	PORTUGAL	In presence
GERMANA SANTOS	Foundation for Science and Technology (FCT)	PORTUGAL	Online
ANA ISABEL DA SILVA MENDES	University of Évora-Water4All member- Pillar A partner	PORTUGAL	In presence
ALFONSO EXPÓSITO GARCÍA	University of Malaga	SPAIN	In presence
PABLO TEMBOURY MORENO	Empresa Municipal Agua de Málaga (EMASA)	SPAIN	In presence
BERTRAND VALLET	DG RTD	European Commision	Online
GUIDO SCHMIDT	Fresh Thoughts Consulting GmbH	AUSTRIA	Online
BAIBA SVANE UPMALE	Ministry of Education & Science - Water4All member- Pillar A partner	Latvia	Online
BENEDETTA SALA	DANISH EMBASSY DELEGATE	DENMARK	In presence
MONICA D'AMBROSIO	Tg RICICLA -Media	ITALY	In presence

REFERENCES

- www.era-learn.eu/documents/era-learn-publications/d3-2_final_3nov2015.pdf
- https://ec.europa.eu/isa2/sites/default/files/technology_readiness_revisited_-_icegov2020.pdf
- www.era-learn.eu/documents/era-learn-publications/synthesis-report_alignment_sept2017_final.pdf
- https://cordis.europa.eu/it

water4all@agencerecherche.fr
http://www.water4all-partnership.eu

Grant Agreement n° 101060874

Co-funded by
the European Union