



Progress and lessons learnt from the stakeholder engagement in MULTISOURCE pilot locations (final report)

Deliverable 6.5

Deliverable Number and Name	D6.5 - Progress and lessons learnt from the stakeholder engagement in MULTISOURCE pilot locations (final report)
Work Package	WP6 – Stakeholder Engagement
Dissemination Level	PU
Author(s)	Elena Petsani
Primary Contact and Email	elena.petsani@iclei.org
Date Due	31 st of May 2025
Date Submitted	21 st of May 2025
File Name	Progress and lessons learnt from the stakeholder engagement in MULTISOURCE pilot locations (final report)
Status	Submitted
Reviewed by (if applicable)	Jaime Nivala, INRAE, Laura Pirazan Palomar ICLEI
Suggested citation	Petsani (2025) Progress and lessons learnt from the stakeholder engagement in MULTISOURCE pilot locations (final report). MULTISOURCE Deliverable 6.5, H2020 grant no. 101003527

© 2025 MULTISOURCE, this work is openly licensed via [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/)

This deliverable contains original unpublished work except when indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation, or both. Reproduction is authorised if the source is acknowledged.

This document has been prepared in the framework of the European project MULTISOURCE. This project has received funding from the European Union’s Horizon 2020 innovation action programme under grant agreement no. 101003527.

The sole responsibility for the content of this publication lies with the authors. It does not necessarily represent the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.



TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	5
READERS' GUIDE	6
Purpose of the Report	6
Who Should Read This Report and Why?	6
How to Use This Report?	6
INTRODUCTION	7
Background of the MULTISOURCE Project	7
Why Stakeholder Engagement Matters in Water Innovation.....	7
STAKEHOLDER ENGAGEMENT IN MULTISOURCE.....	7
The Goals of Engagement.....	8
THE MULTISOURCE STAKEHOLDER ENGAGEMENT FRAMEWORK.....	9
Overview of the Co-design Framework.....	9
OPERATIONALIZING THE FRAMEWORK: THE ROAD MAP	11
Purpose of the Road Map.....	11
Structure of the Road Map.....	11
Planning Methods of the Road Map.....	11
Customization and Flexibility	12
LESSONS LEARNED FROM ACROSS THE PILOT SITES.....	13
Method of Reflection	13
Success Factors for stakeholder engagement	13
Challenges for stakeholder engagement.....	14
What we learned in MULTISOURCE Pilots?	15
RECOMMENDATIONS	22
For Technical Experts	22
For Water Utilities & City Departments.....	22
General Do's and Don'ts	24
ANNEXES	26
Stakeholder Engagement Co-design framework	26
Road Map Template	26
Introduction to the roadmap.....	26
Main purpose.....	27
Implementation Strategy: Timeline of the Activities.....	27
Monitoring your timeline.....	28
Detailed Planning of the stakeholder activities	29
Documentation of project outcomes: Stakeholder Engagement Activity Template... 30	
Glossary of Key Terms.....	31
References	32

List of Tables

Table 1. Purpose of engagement: Why to engage with the stakeholders?	9
Table 3 Overview of general recommendations for stakeholder engagement.....	25
Table 4. Task Management Table	28
Table 5. Detail information for the stakeholder engagement activities.....	29
Table 6. Documentation of project outcomes	30

List of Figures

Figure 1. Co-design framework overview	10
Figure 2. Example of the long-term planning timeline	27
Figure 3. Example of the short-term planning timeline.....	28

Abbreviation List

CAPEX	Capital expenditures
CMM	Milan Metropolitan Area
ENTS	Enhanced Natural Treatment Solutions
EU	European Union
ICWS	Wetland Community Congress
LA	Local Authorities
LL	Living Lab
NbS	Nature-Based Solutions
NBSWT	Nature-Based Solutions for Water Treatment
O&M	Operation and Maintenance
OPEX	Operational expenditures
PPTs	PowerPoint
PU	Potable Use
TP	Technical Partners
UGent	University of Ghent
VMM	Flemish Environmental Agency
WP	Work Package

Executive Summary

The purpose of this report is to reflect on the stakeholder engagement experiences across the diverse pilot sites within the [MULTISOURCE project](#). It aims to provide a practical resource for future technical projects. The report is designed not just as a summary of activities undertaken, but to offer insights into what worked, what did not, and how others can build on this experience.

This report is a useful resource for experts who are involved in or planning similar technical projects, particularly in water innovation or nature-based solutions, who need to understand the critical role and effective implementation of stakeholder engagement. It is a resource for understanding how the MULTISOURCE [Co-design Stakeholder Engagement Framework](#) operational tools, like [Road Maps](#), were applied, and provides **practical recommendations** based on lessons learned from real-world pilot site experiences.

Several key lessons were learned from stakeholder engagement activities across the [Pilot Sites](#). Firstly, **framing engagement around a stakeholder's specific mandate** (e.g., water management, urban greening) is often more effective than starting with the broad term "Nature-based Solutions". Secondly, **utilizing interactive and in-person methods**, such as hands-on activities and field visits, generally facilitates richer discussion and practical understanding better than virtual formats. Thirdly, **demonstrating the technology's real-**

world value by presenting performance data, viability, compliance with regulations, and positive user perception is crucial. Fourthly, it is vital to **consider practical and economic aspects**, such as CAPEX/OPEX and local funding limitations, as these are of high interest to many stakeholders, particularly local authorities. Finally, **fostering continuous engagement** helps build relationships and trust, allowing stakeholders to see the evolving value of their involvement over time, rather than relying on one-off events.

This report serves as a guide for implementing the Co-design Stakeholder Engagement Framework within technical projects, specifically focusing on the operationalization through a dedicated **Road Map**. It provides a clear structure to plan, monitor, and evaluate stakeholder engagement activities throughout a project's lifecycle. Users can apply the framework and tools discussed, such as **visual timelines** and the **Stakeholder Engagement Activity Overview Table**, tailoring them to their specific local conditions and project needs. The report includes sections on the framework's structure, operationalization tools, lessons learned, and practical recommendations, acting as a strategic planning and management tool. It supports project leads in defining objectives, identifying stakeholders, assigning roles, and structuring activities aligned with project milestones.

Readers' Guide

Purpose of the Report

This report serves as a reflection on stakeholder engagement activities across the pilot sites in the MULTISOURCE project. Its primary purpose is to provide a practical resource for future technical projects. The goal is to offer insights into what worked, what didn't, and how others can build on the experiences documented.

Who Should Read This Report and Why?

This report is intended for those who need to understand stakeholder engagement in water innovation projects. The intended audience includes:

Technical Experts and Researchers: To learn lessons from engaging stakeholders during pilot development and tool creation.

Water Utilities and City Departments: To understand how to effectively engage with stakeholders regarding NBSWT implementation, planning, and long-term operations.

Policymakers and Regulators: To see how stakeholder engagement can inform policy integration and scaling support for NBSWT.

Project Managers and Technical Teams: To utilize the provided framework, road map, tools, and lessons learned for planning and executing their own stakeholder engagement strategies.

Anyone involved in Nature-Based Solutions or water innovation projects: To gain insights from real-world experiences across diverse contexts.

How to Use This Report?

The report is structured to guide readers through the MULTISOURCE project's approach to stakeholder engagement and share actionable insights. Here's how you can use its different sections:

Start here for a high-level overview of the report's purpose, its intended audience, and some key lessons.

Introduction: This section provides the background of the MULTISOURCE project, explains why stakeholder engagement is crucial in water innovation, and details the purpose and scope of this specific report. It sets the context for the rest of the document.

Stakeholder Engagement in MULTISOURCE: This section explains what stakeholder engagement means in the context of the water innovation and outlines the goals of engagement.

The MULTISOURCE Stakeholder Engagement Framework: This section details the Co-design Framework, a systematic blueprint for interaction, including its three stages: Identify, Assess, Analyse and Prioritise, and Understand and Engage. This is the core methodological section for understanding the stakeholder engagement structured approach.

Operationalizing the Framework: The Road Map: Learn how the Co-design Framework is put into practice using a dedicated Road Map. This section explains the Road Map's purpose, structure, and the planning tools it employs, such as activity timelines and an activity overview table. It also highlights the flexibility and customization features designed to adapt the framework to diverse local contexts.

Lessons Learned: This is a crucial section offering insights gathered through various methods. It outlines the common success factors observed, challenges and obstacles encountered and presents Case Examples from the MULTISOURCE. Read these to understand real-world outcomes and practical findings.

Recommendations: This section translates the lessons learned into practical advice. It provides tailored recommendations for Technical Partners, Water Utilities & City Departments, and offers General Do's and Don'ts applicable to both. This section is highly actionable for future projects.

Introduction

Background of the MULTISOURCE Project

The [MULTISOURCE project](#) focuses on the intersection of Nature Based Solutions for Water Treatment (NBSWT) with environment, circular economy, society, and policy. Its overall goal is to "demonstrate a variety of about Enhanced Natural Treatment Solutions (ENTS) treating a wide range of urban waters and to develop innovative tools, methods, and business models that support citywide planning and long-term operations and maintenance of nature-based solutions for water treatment, storage, and reuse in urban areas worldwide." The project involves seven pilot locations and international partners in Brazil, USA, and Vietnam. Enhanced Natural Treatment Solutions are defined as a sub-group of NBSWT with increased treatment capacity, lower cost, and/or smaller environmental footprint compared to conventional NBSWT.

Why Stakeholder Engagement Matters in Water Innovation

Based on the sources and the experiences drawn during the MULTISOURCE project, stakeholder engagement holds significant importance in the realm of water innovation, particularly when dealing with Nature-Based Solutions (NbS). While NbS are recognized for being technically sound, they often present considerable social and political complexities. A key challenge identified is the lack of structured stakeholder strategies within technical sectors, creating a gap that needs to be addressed for successful implementation. Engagement is viewed as an essential, continuous process critical to the project's success, development, and long-term sustainability of enhanced NbSWT. It aims to move beyond just technical viability to ensure innovative solutions are socially accepted and practically implementable, fostering crucial collaboration, expertise sharing, and the alignment of diverse perspectives. By actively engaging stakeholders, projects can navigate challenges, gather essential insights, build relationships, and integrate these solutions into long-term planning strategies.

Stakeholder Engagement in MULTISOURCE

In the context of the MULTISOURCE project, stakeholder engagement is an integral and systematic process that is critical to the project's success. Stakeholders are defined as those impacted by, possessing relevant information for, interested in, or influenced by the outcomes of the project.

Engagement involves diverse activities aimed at fostering collaboration, sharing expertise, and aligning visions for a more impactful implementation. It utilizes various methods and tools, such as expert group roundtables, interviews, virtual dialogues, workshops, field visits, and visualisations, to enhance dialogue, gather insights, and foster effective communication. This collaborative approach is crucial for advancing the development and integration of innovative NbSWT into long-term planning strategies.

The engagement process is guided by a [Co-design Stakeholder Engagement Framework](#), which involves mapping, analysing, and prioritizing relevant actors. The framework supports the development and implementation of a [Road Map](#), a structured guide outlining objectives, roles, responsibilities, timelines, and specific activities for engaging stakeholders. Engagement is centred on the project's ENTS Pilots and the development of tools and business models.

Who Are Stakeholders in This Context?

Throughout the project activities the Pilots identify several categories of stakeholders involved in the MULTISOURCE project's engagement activities:

Authorities: This includes stakeholders at different levels of government:

- **Local Authorities / Municipalities:** Involved in various activities across pilots, acting as intermediaries and collaborating on matters such as water treatment. Examples include the Milan Metropolitan Area (CMM), Girona, Grand Lyon and Oslo Kommune.

- **Regional Authorities:** Connect national and local authorities and collaborate with other sectors. Examples include regional water authorities, the Flemish Environmental Agency (VMM), and the Housing Agency of Catalonia.
- **National Authorities:** Contribute to overarching policies and are involved in specific activities.

Community and Civil Society: Involved at the grassroots level and in broader public engagement:

- **Local Community:** Provides input, participates in decision-making, and gains knowledge through activities like workshops and surveys. Examples include the Menja't Sant Narcís community garden and general population in Girona.
- **Civil Society Organizations:** Participate in collaborations and provide perspectives.
- **Students:** Engaged in research, educational programs, and pilot presentations.

Private Sector: Serves as a catalyst for innovation and is involved in market integration and implementation: Includes developers, architects, contractors, investors, the touristic sector, construction sector, water utility departments/companies (e.g., De Watergroep, Besos-Tordera consortium), and consultants.

Academia: Contributes specialized knowledge, research outcomes, and innovative approaches: Includes universities (e.g., University of Ghent, University Federal of Santa Catarina, Ho Chi Minh Technical University, Montana State University, etc.), research centres (e.g., ICRA, INRAE, UFZ), knowledge institutes (e.g., VITO Kennispunt Water, VITO), professors, students, and scientists.

Expert Groups/Boards: Convened to contribute specialized insights and discuss technical, governance, and business themes. Examples include the NBSWT metropolitan board in Milan. Moreover, in the case of MULTISOURCE, there were six internationally renowned specialists in areas like sustainable water management, decentralized wastewater treatment, water governance, green and blue infrastructure, and urban well-being. They acted as "critical friends," providing external points of view, assuring quality control, and advising on matching results to real-world scenarios. These experts served as a key dissemination channel.

International Partners: Universities in Brazil (University Federal of Santa Catarina), USA (Montana State University), and Vietnam (Ho Chi Minh University of Technology) bringing unique perspectives from differing contexts and challenges. Their experience enriches global insights for inclusive and effective ENTS approaches. They contribute to and benefit from the project, interacting with ENTS Pilots and providing insights for digital Tools.

The Goals of Engagement

In the MULTISOURCE project, stakeholder engagement is not treated as a single event or isolated activity, but as an essential, continuous process that underpins the development, implementation, and long-term sustainability of enhanced NbS for urban water treatment. The overarching aim is to foster collaboration, share expertise, and align diverse perspectives to ensure that innovative solutions are not only technically sound but also socially accepted and practically implementable.

These overarching goals have been translated into specific, actionable objectives within the project's **Road Map for Stakeholder Engagement for each Pilot**, structured around both long-term ambitions - in the case of the MULTISOURCE project the period between 2022–2025 - and short-term annual targets.

The main goals driving stakeholder activities in MULTISOURCE are as follows:

Category	Objective
Information Sharing & Knowledge Exchange	Present project outcomes, technical data, and share expertise across sectors.
Feedback Collection & Insight Gathering	Gather input on tools, processes, results, and end-user needs.
Co-Design & Co-Development	Collaboratively plan processes, select indicators, validate tools, and align diverse visions.
Relationship Building & Collaboration	Foster dialogue, maintain partnerships, and create cross-sector networks and synergies.
Facilitating Uptake & Implementation	Advance the adoption of NbSWT through policy integration and scaling support.
Monitoring & Evaluation Support	Involve stakeholders in impact monitoring, outcome evaluation, and perception surveys.
Challenge & Barrier Identification	Surface regulatory, operational, and social adoption obstacles; explore solutions collectively.
Capacity Building & Awareness Raising	Translate complex information into accessible formats and increase stakeholder literacy.
Inclusive & Participatory Decision-Making	Ensure diverse voices and perspectives shape project decisions and outcomes.
Setting Shared Objectives	Uncover misalignments and agree on clear, common goals for collaboration and implementation.
Targeted Sector Engagement	Conduct specialized outreach with professional sectors (e.g. construction, tourism).
Continuous Feedback Mechanisms	Establish real-time input loops for iterative project improvements based on stakeholder feedback.

Table 1. Purpose of engagement: Why to engage with stakeholders?

The MULTISOURCE Stakeholder Engagement Framework

Overview of the Co-design Framework

Effective innovation in water-treatment research is contingent not only on technical excellence, but also on the quality of collaboration between scientists, practitioners, policymakers, and communities. At the core of MULTISOURCE is the [Co-design Framework: Engaging with the stakeholders on NBS for Water Treatment](#), a systematic blueprint for participatory, transdisciplinary, and multi-stakeholder interaction that guides every phase of pilot development and tool creation. By structuring engagement around co-design, co-development, co-implementation, and co-evaluation, the framework ensures that local stakeholders, international partners, and advisory experts work together to shape ENTS tools and pilot actions. This inclusive approach transforms one-way knowledge transfer into dynamic exchange, aligning diverse perspectives around shared objectives and delivering outcomes that all parties value and champion.

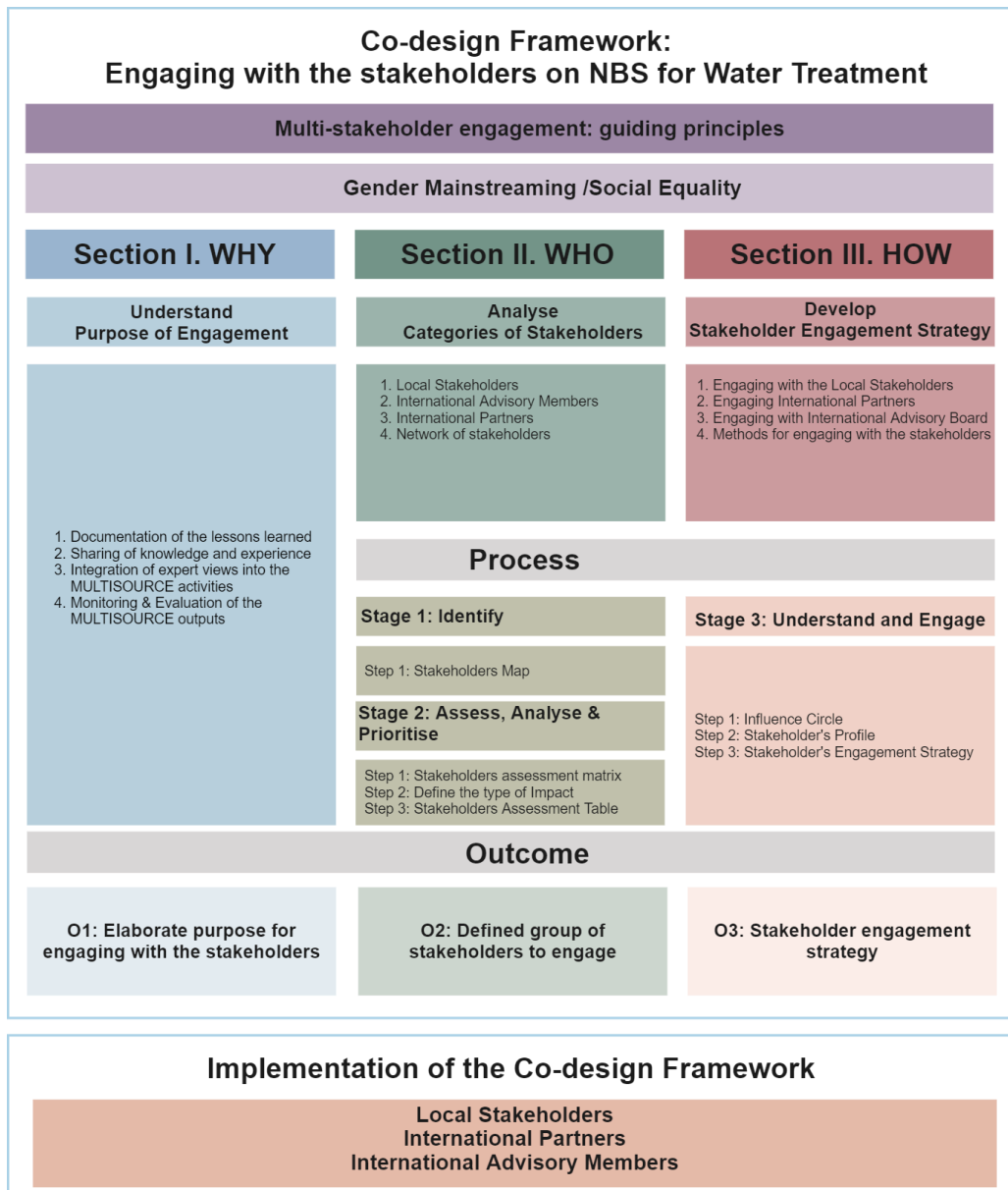


Figure 1. Co-design framework overview

The framework outlines a three-stage process for stakeholder engagement:

- **Stage 1: Identify:** Systematically organizing identified stakeholders through a stakeholder map, including initial information (contact, capacity, interest). ([Template available here](#))
- **Stage 2: Assess, Analyse and Prioritise:** Assessing the level of engagement (Collaborate, Consult, Inform, Involve) based on stakeholder interest and influence. This stage involves an assessment matrix and table to analyse interest, influence, and impact. "The level of engagement is based on the interest and influence each stakeholder has on the relevant ENTS Pilot or supporting mechanism for planning NBSWT." ([Template available here](#))
- **Stage 3: Understand and Engage:** Clustering stakeholders based on influence (influence cycle), developing stakeholder profiles (agenda, field of action, alliances), and creating a Stakeholder Engagement Strategy table (groups, objectives, messages, methods, timeline). ([Template available here](#))

Operationalizing the Framework: The Road Map

The MULTISOURCE project's stakeholder engagement activities have been guided and structured through the application of a Co-design Stakeholder Engagement Framework. To operationalise this framework effectively within the technical Pilots and tool development processes, a dedicated [Road Map](#) was developed. The Road Map functions as a strategic planning and management tool, supporting partners in coordinating, implementing, and monitoring stakeholder engagement activities in alignment with project milestones and outputs.

Purpose of the Road Map

The Road Map serves as a structured, practical guide for implementing the Co-design Stakeholder Engagement Framework across the project's technical Pilots and supporting tools. The Road Map ensures coherence, continuity, and flexibility in stakeholder engagement, providing partners with a reliable structure that can be tailored to local project conditions and updated as needed. Its main functions include:

- Providing a clear framework to plan, monitor, and evaluate stakeholder engagement activities throughout the project.
- Guiding Pilot and Tool leads in defining engagement objectives, identifying relevant stakeholders, and assigning roles and responsibilities.
- Structuring and sequencing engagement activities to align with the project's technical milestones, deliverables, and outputs.
- Supporting integration between the development of ENTS, the co-creation of business models, and the design of supporting decision-making tools.
- Emphasizing the strategic moments in each Pilot or Tool's lifecycle where stakeholder input is critical to success.

Structure of the Road Map

The Road Map is designed to guide stakeholder engagement activities from a both short-term and long-term perspective, covering the entire project lifecycle. This dual perspective allows teams to plan proactively while retaining the flexibility to adjust to emerging opportunities and challenges. Its structure includes:

- **An Introduction** to contextualize the engagement approach.
- **Long-Term Objectives (i.e., 2022–2025):** Strategic engagement goals and expected outcomes for the project's full duration.
- **Short-Term Objectives (i.e., 2022–2023):** Annual, adaptable objectives and expected outcomes aligned with project developments and lessons learned.
- **A Visual Timeline of Activities:** Structured by year and month, identifying engagement opportunities, deliverables, milestones, and strategic moments for interaction.

Planning Methods of the Road Map

The Road Map serves as a planning guide and a structured guide for implementing the Co-design Stakeholder Engagement Framework within the MULTISOURCE project. The Road Map offers several planning tools to facilitate this process, which fall under the category of Visual Planning Tools:

The Road Map Structure Itself: While not a single "tool" in the sense of a document, the structure of the Road Map is a planning framework. It outlines sections for an introduction, long-term objectives, short-term objectives, and a timeline. This structure guides Pilot leads in developing their strategy for implementing stakeholder engagement.

Activity Timelines: These are used to ensure the achievement of both short-term and long-term objectives for stakeholder engagement. The timeline is depicted as a horizontal arrow with yearly and monthly intervals. The Road Map Template is provided for **long-term planning timeline** (e.g., 2022-2025 for MULTISOURCE) and **short-term planning timeline** (e.g., 2022-2023). These timelines indicate key elements such as Project Meetings, Main Outputs, Milestones, and potential strategic moments to engage with stakeholders. The timeline of activities is not an exhaustive list and can be revised and updated periodically.

Detailed Planning of the stakeholder activities: This is a **strategic planning tool**. It is designed to assist Pilot/Tool leads in conceptualizing and implementing stakeholder engagement activities effectively. The table helps partners align their initiatives with short-term project activities and the project's primary outputs. It provides a structured approach and comprises key sections including:

- Introduction to the Stakeholder Engagement Activity (Title and short description).
- Link to Project's Milestone/Deliverables (Title and short description).
- Context of the engagement activity (Why – Purpose, Who – Groups of stakeholders, How – Method to engage).
- Timeline for the activity preparation and implementation (Period to engage).
- Organisational Logistics of the activity (Leading organisation, Potential synergies, ICLEI support, Potential event integration).

Customization and Flexibility

Recognising the diverse operational, institutional, and social contexts of a pilot, the Road Map is intentionally designed as a **flexible, adaptable guide** rather than a prescriptive template. Pilot and Tool leads are encouraged to customise the Road Map to suit their local engagement needs and operational constraints. Key aspects of this flexible approach included:

- **Annual Updating of Short-Term Plans:** Short-term objectives should be revised on an annual basis to incorporate lessons learned, respond to new developments, and maintain alignment with project progress.
- **Iterative Revision of Activity Timelines:** Engagement activity timelines should be treated as living documents, regularly updated to reflect changes in local conditions, stakeholder availability, and emerging project opportunities.
- **Local Adaptation of Engagement Strategies:** Each Pilot tailored its engagement approach based on site-specific objectives, stakeholder groups, and operational realities while remaining within the broader framework.

Lessons Learned from Across the Pilot Sites

Method of Reflection

Throughout the project lifetime the lessons learned (read [here](#) the first version) from stakeholder engagement activities were gathered through various methods and documented based on the experiences and outcomes of these engagements. The following overview indicates how the lessons were gathered:

- **Through Stakeholder Engagement Activities:** Lessons were derived from specific activities such as workshops, interviews, conferences, plenary discussions, and field visits.
- **By Documenting Challenges:** The challenges encountered during stakeholder engagement were a significant source for identifying lessons learned. For example, difficulties in engaging certain stakeholders, time constraints, lack of common vocabulary, conflicting views, or participants being unwilling to engage directly contributed to the lessons documented.
- **By Identifying Key Highlights:** The successful aspects and positive outcomes of the activities also informed the lessons learned. For instance, high interest from interviewees, positive feedback, engaged participants, interesting discussions, or valuable insights highlighted effective approaches or areas of interest, leading to lessons.
- **Through Specific Tools and Methods:** Various tools and methods facilitated the gathering of information during the activities from which lessons were drawn:
 - **Discussions and Roundtables:** Activities often involved round-table discussions or plenary discussions, sometimes supported by microphones and recording, or note-taking.
 - **Workshops:** Workshops utilized presentations, moderation kits, flip charts, posters, post-its, and printed cards to facilitate interactive activities and discussions.
 - **Interviews and Surveys:** Interviews sometimes used Zoom and recording functions, along with transcription tools like Otter. Surveys utilized questionnaires to gather perceptions and opinions.
 - **Digital Tools:** Online platforms like Zoom, Figma, Mentimeter, PowerPoint, and Prezi were used, some facilitating the gathering of feedback and suggestions for improvement.
- **Through Observation:** Observations made during activities, such as noting gender balance, potential gender power imbalances, or the level of participant engagement, likely contributed to the insights captured in the highlights, challenges, and lessons learned columns.

Success Factors for stakeholder engagement

Based on the stakeholder activities that took place in the different Pilot areas, several factors appear to contribute to successful engagement with various stakeholders when discussing technologies for water treatment:



Setting a Clear and Specific Goal

Having a specific and not too ambitious goal is important to effectively start the discussion

during engagement activities.

Clear Communication and Presentation More tailored approaches in explaining results can be

beneficial. Improving the quality of presentations (e.g., making PPTs more attractive) is suggested as a way to enhance knowledge sharing.



Framing the Engagement by Stakeholder Mandate For initial engagement, it can be more effective to approach stakeholders

through the lens of their particular mandate, such as water, urban greening, or greening real estate, rather than starting with the term "nature-based solutions". Students, for

example, showed great interest in the economic and legislative aspects of the green wall, indicating the importance of aligning discussions with specific stakeholder interests. The topic being highly relevant seems to contribute to interest and engagement.



Utilizing Interactive and in-Person Methods

Presential discussions are generally considered better than virtual ones. Hands-on activities around a table work well. People appreciate discussing things around a table using posters and markers. Workflows validated in workshops led to suggested improvements on the tools. Tables with a mix of people with different backgrounds (research, authorities, administration, etc.) often contribute to interesting and enlightening discussions. Field visits explaining the operation and maintenance of a technology like the greywater treatment plant garnered significant interest and questions from participants, including a water utility consortium and students.



Encouraging and Valuing Participation

During discussions, there were plenty of engaged participants, leading to good outcomes. Attempting to value all opinions, even those that may seem totally nonsensical, is suggested as a way to maintain a positive mood during meetings.

Building Relationships and Trust Making personal contact with stakeholders and sharing expertise are listed as engagement goals.

Challenges for stakeholder engagement

Based on the reporting of the activities, several factors have been identified as potential barriers or hindering factors to continuous engagement with stakeholders regarding water treatment technologies:



Lack of Interest or Unwillingness to Participate:

Some stakeholders may simply not show interest in participating in engagement activities. It can be challenging to engage entities or individuals who have proven difficult to engage in other contexts as well. Furthermore, in some activities, a participant might be unwilling to engage in conversation, especially if they feel their opinions are not being taken into consideration. Low participation rates were also

Fostering continuous engagement aims to establish closer relationships. Being involved before an activity helps prevent being perceived as an outlander.



Documenting Outcomes

Using shared work tools (e.g. shared document, interactive board, such as a Miro or Mural board, etc.) that leave a written record of results is listed as a good practice.



Demonstrating the Technology's Value and Success

Presenting the viability, i.e. the capability to purify greywater, and compliance with regulations of a technology like the green wall can be a highlight of engagement. Showcasing positive user perception related to the presence of the green wall is also a key finding. People's perception of areas being "greener" and "better" after the implementation of storm water management measures indicates positive outcomes that can be shared during engagement. Highlighting that a multi-criteria [analysis tool](#) can help identify and advise on the best NBS options for specific conditions demonstrates the practical value of such tools.

Considering Practical and Economic Aspects

Discussions involved evaluating possible technical problems and considering the economic aspect, especially given funding limitations for local authorities. Accounting for economic aspects in initiatives, interventions, construction, and maintenance is highlighted as a lesson learned.

noted challenges during surveys and interviews, with few people stopping and being willing to participate.



Limitations of Engagement Methods:

Virtual methods, such as virtual webinars, are noted as not facilitating discussion as effectively as in-person methods. When conducting surveys or interviews, few people may stop and be willing to participate, and participants might perceive surveyors as salespeople, which can

reduce participation. Also, results from surveys in a specific area might show that participants mostly share the same opinions, limiting the diversity of feedback.



Time Constraints and Availability:

Participants often face time constraints, and in some cases, they may not be present for the entire duration of a workshop or activity. Finding a suitable date for all potential participants can also be a challenge.



Difficulty Reaching Certain Stakeholders:

It can be challenging to reach stakeholders who are not already familiar with the specific technologies, such as or terms such as Nature-Based Solutions for water treatment.

Diversity in Stakeholder Backgrounds, Expertise, and Needs: The high diversity in expertise and needs related to the implementation of the technologies (like NbS) among stakeholders is an asset but at the same time if not properly facilitated can pose a challenge in building consensus.



Communication Issues: Finding a common vocabulary among participants can be difficult. There can also be a need for more

improvement in explaining results to ensure understanding.



Conflicting Views: During discussions, there can be conflicting views among participants, such as on the necessity of monitoring impacts.

Some community members, for example, may not be interested in indicators.



Economic Constraints: Local authorities may have limited funds available, which means economic aspects concerning initiatives,

interventions, construction, and maintenance must be carefully considered. The high operational (OPEX) and capital expenditures (CAPEX) of certain technologies, like the green wall combined with the ozonation site, are also noted, which can impact feasibility.

Lack of Resources for Follow-up: There can be challenges related to the availability of funds for conducting follow-up activities, such as new seminars or workshops.

What we learned in MULTISOURCE Pilots?

The following Case study examples describe engagement efforts across several key areas, which can be viewed as case studies or central components of the project's work:

Raw Wastewater: Factsheets for [General audience/Technical audience](#)

High-strength wastewater: Factsheets for [General audience/Technical audience](#),

Pre-treated wastewater: Factsheets for [General audience/Technical audience](#),

Combined Sewer Overflow: Factsheets for [General audience/Technical audience](#),

Greywater: Factsheets for [General audience/Technical audience](#),

Road Runoff: Factsheets for [General audience/Technical audience](#),

Rainwater: Factsheets for [General audience/Technical audience](#), and

[Technology Selection Tool](#) and [the planning platform](#).

[Italy - IRIDRA - Hybrid treatment wetland treating combined sewer overflows](#)

The Story

Since December 2022, the Italy Pilot has pursued a dual mission: to demonstrate the efficacy of Nature-Based Solutions for Water Treatment (NBSWT) across the metropolitan area and to forge a lasting governance forum that will sustain these innovations beyond the project's end in 2025. Underpinned by robust scientific outputs from MULTISOURCE work packages, the pilot engages regional legislators, metropolitan authorities, and utilities to co-design, co-implement, and ultimately co-own a permanent NBSWT Metropolitan Board. This platform will translate evidence into policy, refine decision-support tools, and seed replicable urban water strategies.

The Journey: Timeline of Engagement

Roadmap & Inaugural Board

December 2022 - Finalized the 2022–2025 stakeholder engagement roadmap.

February 2023 - Convened the 1^{er} NBSWT Metropolitan Board: presented foundational pilot data, established terms of reference, and solicited expert insights.

Expert Workshops & Municipal Collaboration

November 2023 - Hosted the ANCI Lab session, drawing planners from across the metropolitan council to discuss integration of NBSWT into urban bylaws.

November 2023 - Held the 2nd Metropolitan Board meeting: reviewed progress on policy alignment and tool development.

Community Co-Design & Tool Validation

February 2024 – Engaged with stakeholders involved in the project (ATO, CAP, Municipality of Bresso and Lombardy Region) to understand how to support and develop the project of “quartiere benessere” in a co-design workshop to capture local water-management challenges and aspirations.

March 2024 - Ran a Business-Model Workshop with utilities and investors to co-craft sustainable financing scenarios.

May 2024 - 3rd Metropolitan Board meeting: presented interim outcomes, including pilot performance metrics and early tool feedback.

June 2024 - Nat4Wat Hackathon: demonstrated the WP4 decision-support tool, gathering hands-on user feedback to refine interfaces and workflows.

Technical Consolidation & Future Governance

May 2025 - Metropolitan Board Technical Table: showcased in-depth results from WPs 1–2, deepening stakeholders' technical confidence.

Autumn 2025 (planned) - Business Table session: finalize long-term governance structures and funding commitments for the NBSWT Board.

Making a Difference: Intended Impact & Outcomes

Sustained Governance: Establish the Metropolitan Board as a permanent cross-sector forum, ensuring continuous dialogue on urban water management.

Policy Integration: Equip legislators and regulators with pilot-derived data and tool demonstrations to inform revisions to regional water-reuse legislation.

Local Ownership: Co-design governance and financing models with utilities, investors, and community representatives to guarantee operational and financial viability.

Tool Uptake: Validate and refine MULTISOURCE decision-support tools through hands-on workshops and hackathons, accelerating real-world adoption.

Replicability & Scaling: Use stakeholder feedback to shape guidelines for rolling out NBSWT systems in other metropolitan contexts-transforming a pilot into a scalable model.

Lessons Learned

Value of a Clear Roadmap: Establishing the 2022–2025 engagement plan up front ensured all partners understood the phased approach—from initial Board setup to technical and business tables-helping maintain momentum.

Balance Technical & Policy Dialogues: Alternating deeply technical sessions (e.g. WP1–

2 results) with broader policy-oriented Board meetings kept both specialists and decision-makers engaged.

Hands-On Formats Drive Feedback: The Nat4Wat Hackathon and co-design workshops (e.g. Bresso community, business-model session) proved highly effective for eliciting concrete user requirements and refining tools.

Early, Inclusive Stakeholder Mapping: Involving regional legislators, utilities, municipal planners, and community advocates from the first Board meeting fostered ownership and surfaced diverse perspectives.

Documentation Framework: Having standard templates for Board meetings and workshops creates a reliable structure for capturing insights-critical for learning and reporting, even if detailed lessons are still being logged.

Challenges Encountered

Diverse Expectations: Aligning the technical depth required by researchers with the practical concerns of policymakers, utilities, and community groups remains a delicate balancing act.

Sustaining Multi-Year Engagement: Keeping high-level stakeholders committed over a four-year timeline demands careful scheduling, regular follow-ups, and clear demonstration of ongoing value.

Variable Documentation Cadence: While templates exist, timely completion of post-event reports has lagged, limiting visibility into operational challenges and “on-the-ground” learning.

Governance Complexity: Designing a permanent NBSWT Metropolitan Board requires negotiating across multiple jurisdictions and agencies-each with its own processes, priorities, and resource constraints.

[Norway - Raingarden treating road runoff](#)

The Story: Stakeholder engagement in Oslo centred on sharing knowledge and experience related to storm water treatment, focusing on challenges, solutions, and the introduction of new nature-based approaches. These activities involved professionals, authorities, researchers, and others. Later engagements included

conducting surveys and interviews to evaluate how people perceive newly implemented measures and the areas surrounding them.

The Journey: Timeline of Stakeholder Engagement

March 2023: Seminar focusing on presenting Nordic experience, identifying challenges in current practice, and introducing new nature-based solutions for storm water treatment.

September 2023: Oslo Raingarden seminar targeting a broad audience to share knowledge and experience, identifying common interests via Mentimeter.

June 2024: Survey conducted at the pilot site to gather perceptions on the measure and the area before and after its implementation.

June 2024: Interviews conducted at a different site with similar attributes to the pilot site to gather perceptions on the measure.

Making a Difference: Impact and Outcomes of Engagement:

- High engagement levels achieved through carefully curated, mixed-stakeholder group discussions.
- Common interests and shared challenges identified across stakeholder groups, laying a foundation for continued collaboration.
- Enhanced sectoral momentum, with many participants expressing interest in follow-up workshops and technical seminars.
- Improved public perception of urban spaces following NBS interventions. Surveys indicated residents perceived streets as greener, safer, and generally “better,” particularly where green infrastructure was installed closer to pedestrian and cycling routes.
- Insight into community preferences, highlighting that proximity to greenery influences perceived quality more than overall vegetated area.

Lessons Learned:

- Bringing green elements closer to pedestrians enhances public perception and

satisfaction with urban interventions, regardless of total green space coverage.

- Visible, well-branded survey stands, or information points can improve public participation rates in on-site research activities.
- Diverse, multidisciplinary stakeholder groups generate richer, more actionable discussions than homogenous professional gatherings.
- Timely, context-sensitive engagement topics resonate strongly with professional communities when aligned with regulatory challenges and operational needs.

Challenges Encountered:

- Difficulty encouraging passers-by to participate in on-site surveys, partly due to assumptions of commercial solicitation.
- Limited diversity in survey respondents, with opinions largely reflecting local resident perspectives.

Spain - ICRA - [GreenWall treating greywater](#)

The Story: The Girona Green Wall pilot focuses on implementing and evaluating a greywater treatment system integrated into a green wall, notably at a primary school. Engagement activities have spanned from initial knowledge sharing and relationship building with city members and diverse sectors to detailed planning of construction, technical visits, showcasing the technology's operation and maintenance, engaging with water utilities, conducting workshops on operation and maintenance, and widely sharing knowledge and results, including through academic theses presentations and visits for students. The activities aim to address technical aspects, plan implementation, and demonstrate the technology's performance and potential benefits.

The Journey: Timeline of Stakeholder Engagement

Engagement & Knowledge Sharing

March 2023: Seminar in Girona to share knowledge and expertise, make personal contacts, and highlight the need for multi-

stakeholder engagement in developing multi-functional green spaces.

May 2024: Conference at ICRA Green Wall (Sant Quirze) for sharing collected results, knowledge, and experience.

Technical Planning & Construction

March 2023: Follow-up meeting with the Housing Agency of Catalonia to demonstrate the water treatment plant's operation and plan upcoming activities.

July 2023: Meeting to plan the construction of the green wall in the primary school courtyard from a technical viewpoint.

January 2024: Technical visit to the school with engineers and architects from the municipality for planning necessary construction works.

Operation & Maintenance (O&M)

November 2023: Technical visit to the greywater treatment plant (green wall) with the Housing Agency of Catalonia to explain its operation and maintenance.

April 2024: Workshop for operation and maintenance of the green wall at Àgora school.

April 2024: Meeting for planning maintenance activities for the green wall system.

Academic Research & Presentations

September 2023: MSc thesis presentation on optimization of water reuse and contaminant removal in the ICRA green wall.

March 2024: BSc thesis presentation on contaminant removal and user acceptance of the ICRA green wall.

June 2024: Two BSc thesis presentations—one on a residential-scale prototype, and another on applying multi-criteria analysis to evaluate NBS for wastewater treatment.

September 2024: MSc thesis presentation focused on evaluation of operation and maintenance of the ICRA green wall.

Pilot Demonstrations & Outreach

February 2024: Pilot presentation of the green wall (greywater treatment plant) to the Besòs-Tordera consortium (water utility).

May 2024: Field visit to the ICRA Green Wall (Sant Quirze) for students, explaining the greywater treatment system and raising awareness about water scarcity.

January 2025: Pilot presentation of the green wall to students from the Postgraduate Program in Energy Rehabilitation at CATEB.

Making a Difference: Impact and Outcomes of Engagement

Stakeholder Engagement & Interest

- Personal contact was successfully made with members of the city.
- Water utility participants showed great interest in the green wall technology (NBS), asking many questions about its operation and ability to comply with regulations.
- Students showed significant interest, particularly in the economic and legislative aspects of the green wall and asked many questions about its operation and regulatory compliance.
- Interviews showed a positive perception among tenants regarding the presence of the green wall.

Technical Planning & Construction

- Technical information essential for continuing the project was exchanged during construction planning.
- Terms, conditions, methods, and procedures for construction were defined.

Operation & Maintenance (O&M)

- The operation and maintenance activities of the greywater treatment plant were explained during technical visits.
- Planning for maintenance activities was achieved and possible problems during the system's life were discussed in the O&M workshop.

Technology Validation & Dissemination

- Knowledge and results were shared through conferences and presentations.
- Thesis presentations demonstrated that a small-scale green wall for residential

greywater treatment is viable and capable of purifying water for non-potable uses.

- The green wall combined with an ozonation site is a suitable technology for treating and reusing greywater capable of complying with regulations, although OPEX and CAPEX can be high.
- A multi-criteria analysis was shown to be useful for identifying and advising on the best NBS options based on specific conditions.

Nat4Wat: [Technology Selection Tool Engagement](#)

The Story: Engagement surrounding the Technology Selection Tool was primarily focused on its development and refinement. Activities involved gathering expert feedback on the SNAPP tool as a foundation, discussing and validating the proposed workflow and graphical interface, evaluating the tool's outputs, and integrating knowledge from the project pilots into the tool's knowledge base. These engagements were crucial for ensuring the tool met user needs and effectively supported the selection of appropriate technologies.

The Journey: Timeline of Stakeholder Engagement

April 2022: Interviews conducted as part of WP3 to understand mandates, priorities, pains, and gains of urban actors regarding co-financing NBS-WT. (Note: While not direct tool engagement, this activity gathered foundational user needs relevant to tool development).

June 2022: Workshop to demonstrate the SNAPP tool and gather feedback for potential improvements.

June 2022: Workshop to discuss and validate the workflow for the Multisource technology selection tool.

May 2023: Conference to present and validate the new tool's workflow based on previous workshops.

June 2023: Workshop to gather knowledge about the pilots for inclusion in the tool.

June 2023: Workshop to discuss and validate the graphical interface of the tool.

Making a Difference: Impact and Outcomes of Engagement

- Valuable insights were gained from urban actors regarding co-financing NBS-WT during initial interviews. Interviewees showed high interest in the project results.
- A list of items for potential improvement of the SNAPP tool was generated.
- Improvements on the tool's workflow were achieved.
- Some methods to validate the outcomes of the tool were presented and validated.
- Information about the pilots was gathered for the tool's knowledge base. There was noted a need for a profound revision of the knowledge base.
- A lot of suggestions for further improvement of the graphical interface were generated.

Lessons learned and good practices

Engaging stakeholders initially based on their specific mandate (e.g., water, urban greening) rather than starting with the broad term "nature-based solutions" can be more effective.

In-person discussions are generally preferred over virtual formats for facilitating discussion. **Hands-on activities** around a table or discussing with posters and markers are effective methods.

Challenges Encountered

included difficulty reaching stakeholders not already familiar with NBS and the high diversity in expertise and needs among interviewees.

[Rietland's Phytoparking Pilot in Ypres](#)

Rietland's Phytoparking pilot-part of the MULTISOURCE project-demonstrates how Enhanced Natural Treatment Solutions (ENTS) can clean urban runoff while engaging stakeholders to turn science into practice. Launched in 2021 and running through 2025, Rietland's long-term strategy weaves together knowledge-sharing, policy dialogue, and sector outreach.

Rietland positioned itself as a transparent, trusted partner of the Flemish Environmental Agency (VMM), the University of Ghent,

VLAQWA, De Watergroep, and the wider Wetland Community. Annual meetings have provided a forum to present real-time performance data on pollutant removal, solicit expert feedback, and align research with evolving EU directives. In parallel, Rietland has tapped industry fairs and bespoke workshops-such as three-day architect trainings and open-day site visits-to translate technical insights for the construction and tourism sectors.

The Journey: Timeline of Stakeholder Engagement

Establishment & Long-Term Planning (June 2021 – December 2022)

June 2021 – Inaugural annual meeting with VMM, De Watergroep and academic partners to share early pilot results.

December 2022 – Launch of the 2022–2025 engagement plan, defining recurring annual events, fair participation, and pilot milestones.

Pilot Activation & Monitoring (February 2023 – December 2023)

February 2023 – Tourism-sector Fair (VLAQWA & Westtoer): knowledge exchange on ENTS with hoteliers and park operators.

March 2023 – "Share, Involve & Consult" online meeting with knowledge partners (UGent, VLAQWA) and sector representatives.

April 2023 – Networking with mayors and municipal officials to integrate pilot findings into local planning.

May 2023 – Sensor activation milestone on the Phytoparking pilot, enabling real-time data collection.

June 2023 – Annual co-benefits workshop: refining pilot design based on multi-stakeholder input.

September 2023 – Water-sector Fair: showcasing pollutant removal performance to utilities and regulators.

December 2023 – Kick-off of the 2023 monitoring campaign to validate long-term treatment efficacy.

Capacity Building & Co-design (March 2024 – September 2024)

March 2024 – Three-day hands-on ENTS training for architects, co-designing integration into urban projects.

April 2024 – Second mayors’ networking session: reviewing pilot progress and next-step requirements.

September 2024 – Open day for architects on circular water use at the Phytoparking site, gathering design feedback.

Policy Engagement & Broad Dissemination (November 2024 – January 2025)

November 2024 – Presentation at the ICWS Wetland Community Congress: disseminating pilot outcomes to global experts.

December 2024 – Webinar on circular water use-inviting Belgian and Dutch legislators to discuss regulatory pathways.

December 2024 – Delivery of the final project report and factsheet, consolidating all pilot data and lessons.

January 2025 – End-of-project webinar for policymakers: catalysing legislative adoption of effluent-reuse standards.

Making a Difference: Impact & Outcomes of Engagement

Knowledge Transfer & Trust-Building: Shared phytoparking removal-efficiency data with academia, government bodies, and the Wetland Community, positioning Rietland as a trusted partner.

Policy Influence: Annual stakeholder meetings focused on translating EU directives into Belgian law-laying groundwork to revise Flemish regulations on irrigation/infiltration reuse.

Sector Mobilization: Engaged tourism and construction stakeholders to raise awareness of water scarcity, gather requirements, and foster NBS adoption in new projects.

Sustainable Operations: Used pilot insights to inform citywide planning, O&M frameworks, and decentralized-treatment consultations-ensuring long-term viability of nature-based solutions.

Community & Industry Outreach: Leveraged fairs, congresses, and the “Code van Goede Praktijk” to expand the project’s influence and embed best practices in regional planning and construction standards

Recommendations

For Technical Experts

Tailoring & Goal setting



Frame around mandates: Tailor the engagement to each stakeholder’s specific remit (e.g., water management, urban greening, real estate) instead of using the generic “nature-based solutions” label.

Define clear objectives: Set specific, achievable goals for each meeting or workshop to give participants a concrete reason to engage from the outset.

Clear Communication & Materials



Use appropriate terminology: Avoid jargon, provide ample context, and build a common vocabulary so all attendees share the same baseline understanding.

Enhance presentation assets: Design attractive, easy-to-digest communication materials (slides, handouts, visuals) to clarify complex concepts and keep audiences engaged.

Demonstrating Value & Feasibility



Show real-world results: Present concrete outcomes-performance data, operational demos, pilot findings-to illustrate the technology’s impact.

Address economics & regulation: Be explicit about capital/operational costs (CAPEX/OPEX) and how the solution meets or exceeds relevant legislative requirements.

Building Inclusive, Transparent Relationships



Value all input: Acknowledge every contribution-even dissenting views-to foster a positive atmosphere and signal that every perspective matters.

Maintain continuous touchpoints: Schedule regular follow-ups rather than one-off events to deepen relationships and reinforce evolving project value.

Leverage shared tools: Use collaborative platforms (shared documents, live tracking

tools) to transparently record inputs and show stakeholders exactly how their feedback shapes outcomes.

For Water Utilities & City Departments

Strategic Alignment & Framing



Target by mandate: Frame discussions around each department’s core responsibilities (e.g. drinking-water treatment, distribution network upkeep, wastewater regulations) rather than the generic sustainability label.

Involve early: Engage relevant units (engineering, planning, compliance) in the preparatory phase to avoid “outlander” perceptions and tap into their operational knowledge from the start.

Structured Objectives & Planning



Define clear goals: For every meeting, workshop or site visit, set one specific, achievable outcome (e.g. finalize a piping detail, validate a tool input) so participants see immediate value in attending.

Use shared work tools: Employ collaborative platforms (e.g. shared spreadsheets, annotated diagrams) that automatically record decisions and action items-this delivers a tangible product of the session.

Economic & Regulatory Clarity



Show costs & compliance: Present CAPEX/OPEX estimates alongside regulatory requirements or upcoming legislative drivers. This speaks directly to budgetary and policy concerns of utilities and municipal departments.

Link to existing frameworks: Map the NbS solution onto current local regulations or planned infrastructure upgrades to illustrate seamless integration.

Clear Communication & Materials



Plain-language summaries: Translate technical data (flow rates, contaminant removal efficiencies) into concise bullet points or

infographics so non-specialist units (e.g. finance, legal) can follow.

Enhanced visuals: Upgrade PPTs and handouts with process flow diagrams, before/after photos, and annotated schematics to make complex concepts instantly graspable.

Hands-On Demonstrations & Validation



Operational site visits: Organize guided tours of pilot plants, highlighting O&M routines, instrumentation readouts, and compliance checks so stakeholders see performance “live.”

Tool outcome validation: Present real-world data to validate modelling or decision-support tools (e.g. SNAPP), building confidence in their predictive accuracy.

Sustained, Inclusive Relationships



Continuous engagement: Plan recurring check-ins-quarterly technical reviews or annual planning workshops-to build trust and keep NbS outcomes top-of-mind.

Acknowledge all input: Actively solicit and credit feedback from every division (even if initially off-topic) to foster a positive culture of collaboration.

General Do's and Don'ts

This section provides a table summarizing practical guidance for engaging stakeholders for both local authorities (LA) and technical partners (TP):

Area of Engagement	Do's Guidance	Don'ts Things to Avoid	Applies to
Initial Contact & Framing	Tailor engagement by framing discussions around stakeholders' existing mandates and priorities (such as water management, urban greening, or real estate greening), rather than just using the term "nature-based solutions".	Assume stakeholders are already familiar with nature-based solutions or have uniform expertise and needs regarding their implementation.	Both
Setting Objectives	Set specific and achievable goals for each engagement activity to help initiate discussion and provide a tangible purpose.	Design engagements with vague or overly ambitious goals that make it difficult for discussions to start or achieve concrete outcomes.	Both
Practical Concerns (Cost, Regulation, Feasibility)	Explicitly address economic aspects (CAPEX and OPEX) and demonstrate how proposed solutions comply with existing regulations . Local authorities often have limited funds, and these practical aspects are of high interest.	Ignore or dismiss stakeholders' practical concerns , particularly regarding costs, feasibility, and regulatory compliance.	Both (Context varies)
Communication & Presentation	Use clear, non-technical language and provide sufficient "pedagogy" when explaining complex results and concepts to accommodate diverse expertise levels. Improve presentation materials (e.g., PPTs) to make them more attractive and easier to follow.	Use overly technical jargon or assume a common vocabulary , as this can be a challenge in diverse groups.	Both
Demonstration & Practicality	Demonstrate concrete results and practical application through technical visits to operational pilot sites . Showcasing how solutions operate and explaining maintenance activities can be very effective and helps demonstrate compliance.	Rely only on theoretical presentations or explanations; tangible examples and real-world demonstrations through site visits are much more impactful.	Both
Engagement Methods & Format	Prioritize face-to-face meetings and site visits where possible, as they are often more effective for discussion and demonstrating practical aspects compared to solely virtual methods. Utilize interactive work tools (like tables, posters, markers) and mix participants from different backgrounds in group activities.	Rely solely or primarily on virtual tools (like webinars) if the goal is active discussion, knowledge exchange, or facilitating practical understanding.	Both (

Area of Engagement	Do's Guidance	Don'ts Things to Avoid	Applies to
Handling Opinions & Input	Actively value and acknowledge all opinions , even those that seem "totally nonsensical," with the aim of maintaining a positive atmosphere and encouraging continued participation.	Make participants feel unheard or that their opinions are not being considered, as this can lead to disengagement.	Both
Building Relationships	Foster continuous engagement to build relationships and allow stakeholders to see the evolving value of their involvement over time, rather than relying on one-off events.	Expect a close relationship and long-term commitment from single, isolated engagement activities.	Primarily LA
Documentation	Utilize shared work tools that create a transparent and written record of discussions and results.	Leave collaboration outcomes undocumented or opaque if shared understanding and record-keeping are needed.	Primarily LA
Involvement Timing	Involve stakeholders early in planning or preparation phases to help them feel included and make subsequent engagement more effective.	Bring stakeholders into activities late in the process, as they may feel like "outlanders".	Primarily LA
Public Outreach	Clearly communicate the non-commercial nature of public outreach activities, such as surveys or interviews, using visible cues like a clear stand.	Conduct public outreach in a way that could lead people to believe the activity is commercial , which can reduce willingness to participate.	Both
Highlighting User Perspective	Highlight user perception and acceptance findings related to how users or the community perceive the installed solutions or the improved areas.	Focus solely on technical performance ; qualitative data on user perception adds significant value for many stakeholders, including for understanding broader adoption.	Primarily TP

Table 2 Overview of general recommendations for stakeholder engagement

Annexes: Tools, Templates, and Resources

Stakeholder Engagement Co-design framework

The engagement of the different stakeholders in the process of the co-monitoring and co-evaluation of the ENTS Pilots and the co-development of the ENTS Tools need to be based on effective and inclusive processes and methods. To this end, a Co-design framework has been defined that serves as an umbrella document for the stakeholder interactions during the MULTISOURCE project. Furthermore, this document aims to guide the MULTISOURCE project partners in the development of a strategy for the engagement of stakeholders. A set of principles guides project partners in the realisation of this Co-design framework. The framework is developed in a three-section structure (i.e. I) why to engage, II) who to engage, and III) how to engage.) (see Figure 1). The three main Sections and the respective processes (i.e. the stages and steps) have been organised alongside these sections as follows:

Section I: Understand the purpose of engagement

Section II: Analyse the categories of stakeholders

Stage 1: Identify

Step 1: Stakeholders Map ([Template available here](#))

Stage 2: Assess, Analyse, and Prioritise

Step 1: Stakeholders assessment matrix ([Template available here](#))

Step 2: Define the type of Impact ([Template available here](#))

Step3: Stakeholders Assessment Table ([Template available here](#))

Section III: Develop the strategy and methods for engaging with stakeholders.

Stage 3: Understand and Engage

Step 1: Influence Circle ([Template available here](#))

Step 2: Stakeholder's Profile ([Template available here](#))

Step 3: Stakeholder's Engagement Strategy ([Template available here](#))

The completion of each section of the framework leads to the achievement of specific outcomes for an effective and inclusive stakeholder engagement process. The expected outcomes for this Co-design framework are as follows:

Outcome I: The purpose for engaging stakeholders in the case of an activity is defined.

Outcome II: The group of stakeholders fit for the purpose is identified.

Outcome III: The strategy and methods(s) to engage with the group of stakeholders are developed.

Road Map Template

This part of the document describes the structure and the content that is expected to be included by the different partners in the roadmap. The roadmap should be a concise document providing the main information on the long- and short-term planning of the main outputs from, and activities to, engage with the stakeholders. As a general criterion for the elaboration of this document, the roadmap should not exceed five pages, including tables and images.

Introduction to the roadmap

Provide a short description of the roadmap and the relevant activities you plan to develop. The description is limited to a maximum of 120 words.

Main purpose

Draft the long and short-term objectives of the activities you plan to develop for your Pilot/ Tool in accordance with the main outputs you will deliver. The following questions will drive you to develop your objectives.

Long Term Planning 2022-2025

- What are the key objectives during the MULTISOURCE lifetime for your Pilot/ Tool?
- What are the expected outcomes, your Pilot/ Tool aims to produce during the project lifetime?

Short-Term Planning 2024-2025

- What are the key objectives during the period Jan. 2024 – Jan. 2025?
- What are the expected outcomes your Pilot/ Tool aims to produce within this period?

Implementation Strategy: Timeline of the Activities

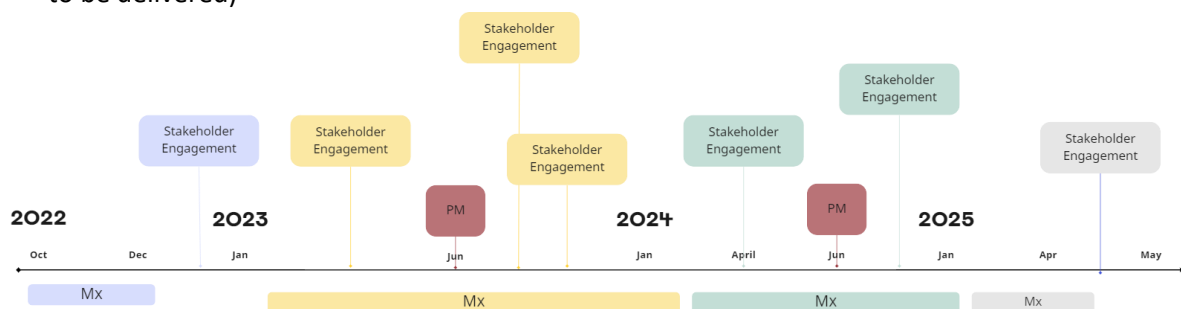
Develop a timeline of the potential activities you plan to develop and engage with the relevant stakeholders.

Long term Planning 2022-2025

Starting point Dec. 2022 till end of the project in 2025

For the long-term planning for the period 2022-2025, the timeframe is Dec 2022 until the end of project. For the development of this part, please take into consideration the Co-design framework for stakeholder engagement. Within this timeframe develop a timeline (horizontal arrow with yearly and monthly (if needed) intervals marked by vertical lines) indicating the years & months of:

- Project Consortium Meetings (if the date is known, if not let's assume we will always meet in June)
- Main Outputs/ Deliverables/ Milestones (pin the activity on the month to be delivered)
- Potential strategic moments to engage with relevant stakeholders (pin the activity on the month to be delivered)



Mx: Main Outputs/ Deliverables/ Milestones

Stakeholder Engagement: Envisaged moments for engagement related to the Mx

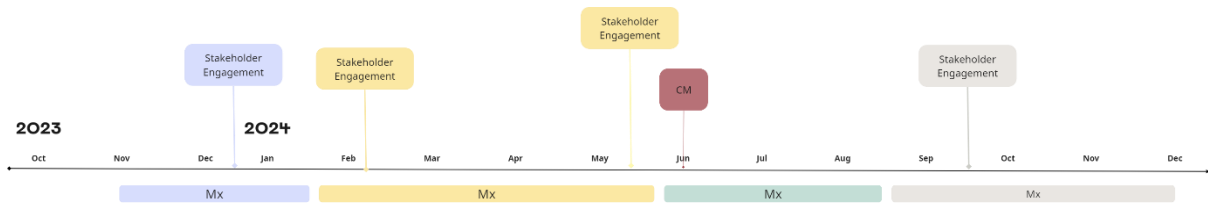
PM: Project Meeting

Figure 2. Example of the long-term planning timeline

Short Term Planning 2024-2025

For the short-term planning for the period 2024-2025, the timeframe is Jan 2024 – Jan 2025. For the development of this part, please take into consideration the Co-design framework for stakeholder engagement. Within this timeframe develop a timeline (horizontal arrow with monthly intervals marked by vertical lines) indicating the month of:

- Annual Project Meeting
- Main Outputs/ Deliverables/ Milestones (pin the activity on the month to be delivered)
- Envisaged moments to engage with the relevant stakeholders linked to the above-mentioned outputs



Mx: Main Output/ Deliverable/ Milestone
Stakeholder Engagement: Envisaged moments for engagement related to the Mx
CM: Consortium Meeting

Figure 3. Example of the short-term planning timeline

Monitoring your timeline

Task Management	Timeline	Lead	Support	Resources
Activities completed				
				Fill out the form for the results
Activities in progress				
Future Activities				

Table 3. Task Management Table

Detailed Planning of the stakeholder activities

Further, elaborate on the above-mentioned activities for the short -term annual plan, by filling the following table:

Introduction to the activity	Title of the Milestone/ Deliverable/Main Output			
	Short description of the Milestones/ Deliverables/Main Outputs to be achieved (max 60 words)			
Co-design Framework for stakeholder engagement	Purpose for stakeholder engagement (Please select one of the following categories and specify the purpose of engagement on your context)			
	Documentation of the lessons learned	Sharing of knowledge and experience	Integration of experts' views	Evaluation of outcomes and outputs
	Group(s) of the stakeholders (Please consult the Stakeholder Engagement Process (i.e. Miro Boards) you have developed for your Pilot/ Tool)			
Method to engage				
Timeline	Period to engage with the stakeholders (Month)			
Logistics of the organisation	Leading organisation to develop the stakeholder engagement activity			
	Potential synergies with other project partners			
	Support from ICLEI (Please select the level of support from ICLEI and specify it based on your context)			
	Basic: Inform ICLEI on the activity development	Intermediate: Consult ICLEI on the activity development	Advanced: Co-develop the activity	
Local/ Regional/ International Event to organise the stakeholder engagement activity as part of it				

Table 4. Detail information for the stakeholder engagement activities

Documentation of project outcomes: Stakeholder Engagement Activity Template

The Road Map will identify the possible activities for the stakeholder engagement. During the implementation and after concluding each stakeholder engagement activity, the MULTISOURCE project partners will document the key outcomes from the activity. The documenting format of the stakeholder engagement activity can be a google form by providing the following information:

Date of the activity	<i>dd.mm.yyyy</i>
Pilot/ Task Name	
Purpose of Engagement	
Main Objectives of engaging with the stakeholders	<i>Objective 1</i> <i>Objective x</i>
Group of stakeholders who participated	<ul style="list-style-type: none"> • <i>Academia (Stakeholder 1, 2, x...)</i> • <i>Public Sector (Stakeholder 1, 2, x...)</i> • <i>Private Sector (Stakeholder 1, 2, x...)</i> • <i>Civil society (Stakeholder 1, 2, x...)</i> • <i>Others (Stakeholder 1, 2, x...)</i>
Gender of the participants	<i>Collect the gender of the invited participants.</i> <i>Note any gender power imbalances during the event. How did you address them?</i>
Method of engagement used during the activity	<i>Method 1, 2, x...</i>
Key highlights from the event (max 200 words)	
Key outputs	<i>Output 1, 2, x...</i>
Challenges in engaging with the stakeholders	<i>Challenge 1, 2, x...</i>
Lesson learned from the stakeholder engagement process	<i>Lesson 1, 2, x...</i>
Inspiration for others to engage with the stakeholders	<i>Good practices emerged 1, 2, x...</i>
List of good ideas for taking action in future events (good practices, tips for stakeholder engagement)	<i>Good ideas to share 1, 2, x...</i>
Tools & resources used	<i>Tool 1, 2, x...</i>

Table 5. Documentation of project outcomes



Glossary of Key Terms

- **Co-design Stakeholder Engagement Framework:** A comprehensive guide used in the MULTISOURCE project for mapping, analysing, and prioritizing relevant actors involved in the development and monitoring of ENTS Pilots and tools. It is structured into three main sections: understanding the purpose of engagement, analysing stakeholder categories, and developing the strategy and methods for engagement.
- **Enhanced Natural Treatment Solutions (ENTS):** A subset of Nature-Based Solutions for Water Treatment (NBSWT) with enhanced treatment capacity, cost-effectiveness, and/or reduced environmental impact compared to conventional alternatives.
- **Living Lab (LL):** A real-world setting where co-creation and validation of tools and approaches take place, exemplified by the Girona pilot in the MULTISOURCE project.
- **Nature-Based Solutions (NBS):** Solutions inspired and supported by nature that use or mimic natural processes to address various environmental and societal challenges.
- **Nature-Based Solutions for Water Treatment (NbSWT):** Nature-Based Solutions specifically applied to the treatment of water.
- **Pilot Locations:** Specific sites where the MULTISOURCE project's ENTS are implemented and monitored, such as Girona (Spain), Oslo (Norway), Milan (Italy), and Lyon (France).
- **Pilot Leads:** The partners in the MULTISOURCE project responsible for the design and monitoring of the ENTS in the technical Pilots and Tools.
- **Road Map:** A structured planning guide for the implementation of the Co-design Stakeholder Engagement Framework, outlining objectives, roles, and responsibilities for engaging with relevant stakeholders over both short and long-term perspectives.
- **Stakeholder:** Individuals or groups who are impacted by, possess relevant information for, are interested in, or are influenced by the outcomes of the MULTISOURCE project.

References

- Akhmouch, A., & Clavreul, D. (2016). Stakeholder Engagement for Inclusive Water Governance: “Practicing What We Preach” with the OECD Water Governance Initiative. *Water*, 8(5), 204. <https://doi.org/10.3390/w8050204>
- Delange, H., & Organisation for Economic Co-operation and Development (Eds.). (2015). Stakeholder engagement for inclusive water governance. OECD.
- Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).
- Elena, P. (2022). Co-design Framework: Engaging with the stakeholders on NBS for Water Treatment. Zenodo. <https://doi.org/10.5281/zenodo.14890968>
- Hemming, V., Burgman, M. A., Hanea, A. M., McBride, M. F., & Wintle, B. C. (2018). A practical guide to structured expert elicitation using the IDEA protocol. *Methods in Ecology and Evolution*, 9(1), 169–180. <https://doi.org/10.1111/2041-210X.12857>
- Jacobs, A., Barnett, C., & Ponsford, R. (2010). Three Approaches to Monitoring: Feedback Systems, Participatory Monitoring and Evaluation and Logical Frameworks. *IDS Bulletin*, 41(6), 36–44. <https://doi.org/10.1111/j.1759-5436.2010.00180.x>
- Keunen, E., & Ruijsink, S. (n.d.). Planning for all? Guiding principles for selecting stakeholder engagement tools in urban planning processes. 25.
- Krueger, T., Page, T., Hubacek, K., Smith, L., & Hiscock, K. (2012). The role of expert opinion in environmental modelling. *Environmental Modelling & Software*, 36, 4–18. <https://doi.org/10.1016/j.envsoft.2012.01.011>
- Morello, E; Mahmoud, I; Gulyurtlu, S; Boelman, V; Davis, H (2018). CLEVER Cities Guidance on co-creating nature-based solutions: PART I Defining the co-creation framework and stakeholder engagement. Deliverable 1.1.5, CLEVER Cities, H2020 grant no. 776604.
- Petrolia, D. R., Nyanzu, F., Cebrian, J., Harri, A., Amato, J., & Walton, W. C. (2020). Eliciting expert judgment to inform management of diverse oyster resources for multiple ecosystem services. *Journal of Environmental Management*, 268, 110676. <https://doi.org/10.1016/j.jenvman.2020.110676>
- Petsani, E. (2023). Progress and lessons learnt from the stakeholder engagement in MULTISOURCE pilot locations (midterm). Zenodo. <https://doi.org/10.5281/zenodo.14891078>
- Potočnik, A., Jurišić, B., & Šneider, S. (2016). Project INTRA: Knowledge Sharing Strategy. Maribor Development Agency.
- Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141(10), 2417–2431. <https://doi.org/10.1016/j.biocon.2008.07.014>

The overall goal of MULTISOURCE is to, together with local, national, and international stakeholders, demonstrate a variety of about Enhanced Natural Treatment Solutions (ENTS) treating a wide range of urban waters and to develop innovative tools, methods, and business models that support citywide planning and long-term operations and maintenance of nature-based solutions for water treatment, storage, and reuse in urban areas worldwide. The project includes seven pilots treating a wide range of urban waters. Two individual municipalities (Girona, Spain; Oslo, Norway), two metropolitan municipalities (Lyon, France; Milan, Italy), and international partners in Brazil, Vietnam, and the USA will contribute to each of the main project activities: ENTS pilots, risk assessment, business models, technology selection, and the MULTISOURCE Planning Platform. The use of urban archetypes in the Planning Platform will enable users to quickly classify regions (in both developed or developing countries) suitable for the application of nature-based solutions for water treatment (NBSWT) and compare scenarios both with and without NBSWT.



This project has received funding from the European Union's Horizon H2020 innovation action programme under grant agreement 101003527.