



Clustering activities interim report

Deliverable 7.4



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

Deliverable Number and Name	D7.4 - Clustering activities interim report
Work Package	WP7 – Communication, Clustering and Dissemination
Dissemination Level	Public
Author(s)	Andrea Rubini, Isabella Gervasio
Primary Contact and Email	Isabella Gervasio – tech@watereurope.eu
Date Due	September 30, 2023 [M28]
Date Submitted	V1_September 30, 2023 V2_November 13, 2024 – updates with PO comments. Adding a chapter on <i>Strategic Outlook</i> and the <i>Conclusion</i>
File Name	
Status	
Reviewed by (if applicable)	
Suggested citation	A. Rubini, I. Gervasio (2023) Clustering activities interim report. MULTISOURCE Deliverable 7.4, H2020 grant no. 101003527

© MULTISOURCE Consortium, 2021

This deliverable contains original unpublished work except when indicated otherwise.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.

© 2025 MULTISOURCE, this work is openly licensed via CC-BY-NC

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	6
1.0 INTRODUCTION	7
2.0 MULTISOURCE AT WATER PROJECT EUROPE	8
2.1 WPE on Water Security.....	8
2.2 WPE Exploring Wetlands and Nature-Based Solutions in the Circular Economy for Water Scarcity.....	9
3.0 SYNERGIES WITH OTHER INITIATIVES AND PROJECTS	11
3.1 Clustering with sister project NICE.....	11
3.2 Clustering with NetworkNature.....	12
3.3 Water Europe Working Group on NbS.....	15
3.4 IWA World Water Congress	16
3.5 United Nation Water Conference	16
3.6 Water Europe Position Paper.....	17
3.7 Synergies with other EU funded projects.....	18
4.0 STRATEGIC OUTLOOK	22
5.0 CONCLUSIONS	24
ANNEX 1: DEBRIEF WPE ON WATER SECURITY.....	25
ANNEX 2: DEBRIEF WPE ON WATER SCARCITY.....	26
ANNEX 3: NICE-MULTISOURCE MEETING AGENDA	27

TABLE OF FIGURES

Figure 2.1	Banner of Water Security WPE event	8
Figure 2.2	Banner of Water Scarcity WPE event.....	9
Figure 3.1	Frame of the joint video.....	13
Figure 3.2	MULTISOURCE's slide on project objectives.....	15
Figure 3.3	MULTISOURCE brochures in the venue.....	17
Figure 3.4	MULTISOURCE brochure showcased	17
Figure 3.5	MULTISOURCE mentioned at Water4All kick-off meeting	18
Figure 3.6	Slide projected with MULTISOURCE logo	18
Figure 3.7	First slide of MULTISOURCE speech.....	19
Figure 3.8	Banner of NbS event.....	20
Figure 3.9	Agenda with MULTISOURCE keynote speech.....	21

ACRONYMES

DRR	Disaster Risk Reduction
ENTS	Enhanced Natural Treatment Solutions
EC	European Commission
ENTS	Enhanced Natural Treatment Solutions
EU	Europe/European
HEU	Horizon Europe
ICLEI	International Council for Local Environmental Initiatives
MAES	Mapping and Assessment of Ecosystems and their Services
NbS	Natural-based Solution
NN	NatureNetwork
REA	Research Executive Agency
R&D	Research and Development
RTD	Research, Technology and Development
TF	Task Force
TRL	Technology Readiness Level
UN	United Nations
W4A	Water4All
WE	Water Europe
WG	Working Group
WOLL	Water-oriented Living Lab
WME	Water Market Europe
WPE	Water Projects Europe

Horizon Europe projects mentioned

ARSINOE	Climate-resilient regions through systemic solutions and innovations
IMPETUS	Dynamic information management approach for the implementation of climate resilient adaptation packages in European regions
NETWORKNATURE	Advancing nature-based solutions together
NICE	Innovative and enhanced Nature-based Solutions for sustainable urban water cycle
REGILIENCE	Resilience Strategies for Regions
TRANSFORMAR	Accelerating and upscaling transformational adaptation in Europe: demonstration of water-related innovation packages
WATER4ALL	Water security for the planet

EXECUTIVE SUMMARY

This report describes the clustering activities that have been carried out within Task T7.3 to liaise with the sister projects funded under the SC5-27-2020 call and other NbS-related projects of special relevance for MULTISOURCE. Clustering activities have been carried out by Water Europe to explore and harmonise common themes and areas with other projects on Natural-based Solutions.

This work focuses on:

- WPE on “*Natural Based Solutions for water security and ecological quality in cities. Challenges, pressures, and opportunities*” in Brussels and livestreamed, June 2022;
- WPE on “*The role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era*” in Lyon (hybrid event), November 2022;
- Joint activities carried on with the sister project NICE and the NetworkNature project
- MULTISOURCE Policy Brief
- Synergies with Horizon Europe projects, Position Papers and other international initiatives

This version of the report is an update from the initial document submitted in September 2023. It includes a new chapter on strategic outlook and future activities, providing a roadmap for the project’s continued engagement and clustering efforts. Additionally, this version features an expanded conclusion, highlighting the achievements and impact of MULTISOURCE’s clustering activities in fostering collaboration and enhancing the visibility of NbS innovations.

1.0 INTRODUCTION

The EU-funded MULTISOURCE project intends to demonstrate Enhanced Natural Treatment Solutions (ENTS) for a wide range of urban waters and enable users to identify multiple sources for local water reuse, promote increased uptake of Nature-based Solutions (NbS) and minimise the discharge of inadequately treated water. The project includes seven pilots treating a wide range of urban waters.

WP7 - Communication, Clustering and Dissemination strives to build synergies amongst research and innovation projects on NbS and to guarantee visibility and engagement of stakeholders by maintaining a strong stakeholder network through events, workshops, knowledge exchange and best practices sharing. Clustering activities and liaising with other NbS-related projects and sister projects funded under the SC5-27-2020 call is of particular relevance to MULTISOURCE.

In order to achieve this goal, Water Europe (WE) has introduced a new series of events called Water Projects Europe (WPE). WPE aims to group water-related projects by thematic areas so that they can interact, build on one another's knowledge and achievements, make the transition from lower to higher Technology Readiness Level (TRL) easier, and promote market outreach.

These actions aim at exploring and harmonising the following areas:

- New governance, business, financing models and economic assessment tools
- Operationalising value of ecosystems
- Identifying new research and innovation issues related to ecosystem services, biodiversity, and natural capital to impact on the European Green Deal.
- Dissemination and exploitation of knowledge and learning on biodiversity and ecosystem services
- Mapping Ecosystems and their services
- Demonstrating innovative NbS in cities and urban Water-Oriented Living Labs (WOLLS) to facilitate market outreach and uptake of innovative solutions.

Task 7.3 - Clustering activities aims at organising clustering and linking with other NbS-related projects funded under the Horizon Europe (HEU) call SC5-27-2020 to explore and harmonise common themes and areas. With this regard several clustering activities have been carried out with similar projects.

The present report **D7.4 - Clustering activities interim report** focalises on:

- WPE on “*Natural Based Solutions for water security and ecological quality in cities. Challenges, pressures, and opportunities*” in Brussels and livestreamed, June 2022;
- WPE on “*The role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era*” in Lyon (hybrid event), November 2022;
- Joint activities carried on with the sister project NICE and the NetworkNature (NN) project
- MULTISOURCE Policy Brief
- Synergies with Horizon Europe projects, Position Papers and other international initiatives

2.0 MULTISOURCE at Water Project Europe

Water Projects Europe (WPE) is a series of events hosted by Water Europe, strategically designed to facilitate learning and knowledge-sharing among innovative projects that operate within intersecting thematic areas. The overarching goal of WPE is to foster a sense of cohesion among water-related projects, enabling them to interact, exchange experiences, contribute to policy development, and promote the sustainability and market adoption of their innovative solutions.

Participating in these events holds significant relevance for projects like MULTISOURCE, as WPE events possess a pan-European reach. These events provide an effective platform for increasing awareness of a project's objectives and the innovative solutions it offers. Furthermore, WPE events offer a valuable opportunity to establish connections and collaborate with other projects in a similar domain. They serve as a means of strengthening partnerships and building bridges within the field of Nature-based Solutions.

Within the initial two years of its existence, the MULTISOURCE project has successfully organized two WPE events. These events were conceived with the aim of building connections and sharing insights with other projects that share a focus on Nature-based Solutions (NbS). These gatherings emphasize collaboration and knowledge exchange, enabling a collective learning experience that enriches the understanding of NbS across various projects.

2.1 WPE on Water Security

On the 2nd of June 2022 MULTISOURCE organised in Brussels a **WPE on “Natural Based Solutions for water security and ecological quality in cities. Challenges, pressures, and opportunities”** in collaboration with the Leader and Co-Leader of the Water Europe Working Group on Natural-based Solutions (NbS). The event provided valuable input to the three dimensions of sustainability of NbS for cities, in particular the environmental, social and financial perspectives, as well as it was a useful opportunity to emphasise the importance of NbS as a support to existing regulations and directives. The event was participated by more than 200 registered participants and live streamed on social media. Figure 1 shows the banner created for the event.

Figure 2.1 Banner of Water Security WPE event



The event invited five different NbS projects funded by Horizon 2020 and LIFE Programmes to give their view and experience on the NbS challenges and opportunities. The workshop session was co-hosted by Jaime Nivala INRAE (coordinator of MULTISOURCE) and Andrea Rubini (Director of Operations of WE).

The event was opened by a keynote, followed by the presentations of the invited projects and their objectives. Next, projects were asked to give an overview of their involvement in the biodiversity and climate strategies. The projects were also requested to provide input on the three dimensions of sustainability of NbS for cities: environmental, social, financial specifically relating to their work as well as insight on supporting and hindering factors of existing regulations and directives. An overview of their contribution to achieving a Water-Smart Society was also mentioned and each project had the opportunity to name discussion statements they would like to talk about.

The workshop culminated in an inspiring and participated discussion between the panellists, and then closed by the hosts with the take-away session.

The participating projects were:

- MULTISOURCE (<https://multisource.eu/>)
- NICE (<https://nice-nbs.eu/>)
- HYDROUSA (<https://www.hydrousa.org/>)
- UNaLaB (<https://unalab.eu/en>)
- Connecting Nature (<https://connectingnature.eu/>)

The main takeaways from the discussions are:

- Systemic approach is key to bring back nature to cities.
- When examining water management with NbS, particularly in the urban setting, there are many different views to take into consideration.
- Identifying the full range of co-benefits that exist in these systems is crucial. When considering the advantages that are both concrete and abstract, this still seems to be a challenge that we have yet to overcome.
- Technology development needs intensification specifically for urban areas. Among other things looking towards providing guidelines and recommendations for policy makers.

Annex 1 “Debrief WPE on Water Security” informs about the event’s outcomes.

2.2 WPE Exploring Wetlands and Nature-Based Solutions in the Circular Economy for Water Scarcity

The **Water Projects Europe on “The role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era”** was organised in Lyon, France as hybrid event on 7th November 2022, in the framework of the ICWS 2022 - International Conference on Wetland Systems for Water Pollution Control. The event gathered 7 projects focused on challenges and innovative solutions for wetlands and NbS to address water scarcity in the circular economy: HYDROUSA, SOLU-BIOD, COST Action Circular Cities, FIT4REUSE, MULTISOURCE and its sister project NICE. During the event panellists discussed solutions and barriers that can foster or hinder NbS as a tool for restoring and creating wetlands in urban and rural areas for efficient water management. The event was promoted also through REA’s newsletter and had more than 70 registered participants was and live streamed on social media. The recordings are stored on YouTube – available at the link <https://www.youtube.com/watch?v=NJ5wO-gZ8qU> - can count on 170 views at the time of the drafting of this report. Figure 2 shows the banner created for the event.

Figure 2.2 Banner of Water Scarcity WPE event



The event invited six NbS recently initiated projects and one almost completed project (HYDROUSA) funded by Horizon 2020, and COST to give their view and experience on the NbS challenges and opportunities. The workshop session was co-hosted by IWA, INRAE/INSA, HYDROUSA, and Andrea Rubini (Director of Operations of Water Europe).

The event commenced with an opening keynote speech, followed by presentations outlining the projects and their respective objectives. Diverse viewpoints on the role of Wetlands and

Nature-based Solutions in addressing water scarcity within the Circular Economy were shared by the panelists. They specifically offered insights into the four sustainability aspects of NbS for wetlands: governance, implementation, financing, and connectivity. Furthermore, the panelists discussed both the facilitating and inhibiting factors associated with current regulations and directives. The presentation also touched upon how their contributions align with the broader goal of fostering a Water-Smart Society. The participating projects were:

- HYDROUSA (<https://www.hydrousa.org/>)
- SOLU-BIOD
- COST Action Circular Cities (<https://circular-city.eu/>)
- MULTISOURCE (<https://multisource.eu/>)
- NICE (<https://nice-nbs.eu/>)
- FIT4REUSE (www.fit4reuse.org)

The main takeaways from the discussions are:

- Existing legislative shortcomings pose challenges when it comes to incorporating green infrastructures into water technologies, thereby hindering the adoption of natural solutions."
- To facilitate interaction and collaboration among numerous communities addressing diverse challenges and sectors, it is crucial to establish a comprehensive definition of Nature-based Solutions that caters to a wider range of sectors."
- Direct community engagement in the regulatory framework is a prerequisite for the effective implementation of NbS."
- Apart from the initial investments required to actualize NbS, it is key to develop sustainable business models that can support the sustainable management of NbS

Annex 2 "Debrief WPE on Water Scarcity" informs about the event's outcomes.

3.0 SYNERGIES WITH OTHER INITIATIVES AND PROJECTS

3.1 Clustering with sister project NICE

NICE is the sister project of MULTISOURCE which has received funding from the European Commission under the Call H2020-SC5-27-2020 “Strengthening international collaboration: Enhanced natural treatment systems for water security and ecological quality in cities”.

In essence, the NICE project is driven by the overarching goal of expanding the accessibility of enhanced Natural Based Solutions, aiming to offer comprehensive urban water solutions. Its core mission is to furnish critical insights for the development and execution of NbS, ultimately facilitating the closure of urban water cycles.

Sharing a common visionary perspective, these two projects have forged a robust alliance from their inception. They are committed to collaborative efforts aimed at amplifying their shared message and impact in the realm of sustainable urban water solutions.

The initial clustering meeting involving MULTISOURCE and NICE was held on June 25, 2021. The primary objectives of this meeting encompassed various aspects, including fostering a mutual understanding of the two projects, introducing the H2020 Nature-based Solutions Taskforces, and identifying areas of synergy and potential collaboration opportunities. For a detailed agenda of this meeting, please refer to Annex 3 “NICE-MULTISOURCE meeting agenda”.

On May 12, 2022, MULTISOURCE had representation at NICE's sister project meetings, specifically the "NICE City Panel" and the NbS Communicators meetings hosted by Network Nature. These engagements were centered around the creation of a community of practice dedicated to expanding knowledge about Nature-based Solutions (NbS). The overarching aim was to explore how NbS could be instrumental in aiding cities in their efforts to mitigate water pollution and runoff. MULTISOURCE received an invitation to join this dynamic community of practice, further underlining its commitment to broadening the availability of knowledge pertaining to NbS for water treatment and reuse within urban environments.

An additional clustering event between MULTISOURCE and NICE is scheduled¹ in the upcoming weeks on the topic “Atelier NICE/MULTISOURCE sur la gestion décentralisée des eaux urbaines”. Objectives of the workshop are to share the progress made by research and local players in developing nature-based solutions (NbS) in response to urban water management issues; Improve understanding of the regulatory framework and the levers for developing NFS; and, define together what changes in practices, policy directions and the regulatory framework would be desirable in the future to effectively address urban water management issues.

¹ the time when this report was written

3.2 Clustering with NetworkNature

By promoting and implementing Nature-based Solutions, societies can enhance ecological resilience, protect biodiversity, and address environmental challenges more sustainably. NbSs align with major EU policy priorities, particularly the European Green Deal, biodiversity strategy, and climate adaptation strategy, as they contribute to fostering biodiversity and making Europe more climate resilient.

To support these objectives, the European Commission (EC) actively engages in policy dialogues and outreach initiatives at both EU and global levels. These efforts aim to foster engagement, develop a broad knowledge base, and stimulate market supply and demand for nature-based solutions.

The EU-funded project '**NetworkNature - Advancing nature-based solutions together**'² was launched to address these needs and bring more nature and natural features into citizens' daily lives. The project's primary goal was to advance the development, uptake, and upscale of NbS across Europe. To achieve this, the NN project established a comprehensive European and global platform, allowing all interested stakeholders to access and contribute cutting-edge, innovative knowledge and expertise on NbS.

Clustering offers several benefits, including enabling synergies, strengthening networks, sharing and harmonising knowledge, communicating and disseminating results with a wider impact, and saving resources through collaboration on common areas of work. (NetworkNature) NN played a crucial role in harnessing these opportunities for Horizon 2020 NbS projects through curated NbS Task Forces (TFs) focused on relevant transversal themes. The TFs covered areas such as NbS knowledge, NbS impact assessment, finance and business models for NbS, NbS communication, and co-creation of NbS.

Ongoing TFs are:

- TF1: Data Management and EU NbS Knowledge Repository
- TF2: NbS Integrated Assessment Framework
- TF3: Governance, Business Models and Financial Mechanisms
- TF4: NbS Communicators
- TF5: NbS education
- TF6: Co-creation and Governance

Task Force 4

Of particular importance to MULTISOURCE is TF4 on communication, currently led by the International Council for Local Environmental Initiatives (ICLEI), which synergizes and enhances communication approaches and messages across projects with the objectives of increasing visibility and dissemination channels for NbS project work and NbS in general. TF4 also engages in joint activities and joint communication efforts to reach a wider audience.

TF4 carried out common communication activities for the cluster, including contributions to the European Research Executive Agency (REA) Newsletter, which reaches 80+ NbS professionals. MULTISOURCE made use of this resource to advertise the Water Project Europe event "Natural Based Solutions for water security and ecological quality in cities. Challenges, pressures, and opportunities" in the 'Events and Webinars' section with the following advertisement: *"On June 2 at 14.00 CEST, H2020 MULTISOURCE project and Water Europe are organising a clustering event involving four EU funded NbS-focused projects (NICE, HYDROUSA, UNALAB, CONNECTING NATURE) to discuss the results, challenges, pressures and opportunities arising from their respective NbS project experiences"*.

MULTISOURCE events, in particular the ones organized by WE, have been presented during TF4 meetings and reported in the related minutes. As an example, the minutes dated May 25, 2023 reports in the 'Announcements and Opportunities' section: *"Water Europe event on NbS: Within the ARSINOE project*

² <https://networknature.eu/>

and with the support of MULTISOURCE, Water Europe is organising an event on "How can NbS support climate-change adaptation and mitigation in the water sector? An illustration with urban stormwater management".

To support joint communication and dissemination, NN carried out a project scoping on all EU-funded projects - see the visualisation with project linkages to the websites provided in ANNEX 3. The document shows EU-Funded NbS research projects addressing **Societal Challenges across Ecosystems** with focus on two main areas:

- **Nature-based solutions across Ecosystems:** MULTISOURCE is cited under the ecosystems' typology of **Urban ecosystems**. The ecosystems typologies were listed based on the policy report "Mapping and assessment of ecosystems and their services (MAES): An EU Ecosystem Assessment Report"³.
- **Addressing Societal Challenges:** 12 societal challenges were considered for assessment, based on the European Commission's publication "Evaluating the impact of Nature-based solutions: A handbook for practitioners"⁴. MULTISOURCE is cited under the social challenges regarding **Participatory planning and governance, Knowledge and Social Capacity building for Sustainable Transformation, and Water management**.

The resource can be uploaded in MULTISOURCE website and can be used for communication purposes.

Furthermore, MULTISOURCE has participated in the production of a joint informational video titled "**What types of Nature-Based-Solutions are there?**". The video is currently in the editing phase, and the link to the resource will be provided once it is uploaded to the YouTube platform. Figure 3.1 displays the video's title in the initial frames. MULTISOURCE logo is featured in the credits section.

Figure 3.1 Frame of the joint video



³ <https://op.europa.eu/en/publication-detail/-/publication/afac1162-0f58-11eb-bc07-01aa75ed71a1/language-en/format-PDF/source-289813547>. European Commission, Joint Research Centre, Maes, J., Teller, A., Erhard, M., et al., *Mapping and assessment of ecosystems and their services : an EU wide ecosystem assessment in support of the EU biodiversity strategy : supplement (indicator fact sheets)*, Publications Office, 2020, <https://data.europa.eu/doi/10.2760/519233>

⁴ <https://op.europa.eu/en/publication-detail/-/publication/d7d496b5-ad4e-11eb-9767-01aa75ed71a1>. European Commission, Directorate-General for Research and Innovation, *Evaluating the impact of nature-based solutions : a handbook for practitioners*, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2777/244577>

MULTISOURCE participation to NetworkNature annual events

NetworkNature annual event 2022

NN organised the Annual Event '*Upscaling Nature-based solutions in policy and practice*', on September 27th in Brussels, to provide participants an opportunity to learn more about the state-of-the-art developments in NbS practice & policy and the overall goal to ensuring nature-based solutions through collaboration.

MULTISOURCE project joined the event to spread the word about how MULTISOURCE project contributes to a nature-positive economy. The event focused on the NN semester theme "*Nature-based solutions and Standards*", to ensure the quality, effectiveness and scale of implementation that helps deliver the European Green Deal and the challenges related to biodiversity, climate change and socio-economic development.

This was a great opportunity for MULTISOURCE to interact and exchange ideas on developing standards around NbS, quality criteria and best practices for integrating NbS more effectively in policy and practice. The sessions featured presentations, capacity building and idea-sharing by the NbS community of practice to learn about the latest developments and success stories in upscaling NbS in policy and practice and to identify opportunities for strengthened engagements and partnerships for NbS.

NetworkNature annual event 2023

Climate change and biodiversity loss are not only environmental matters, but also social and economic crises. In order to safeguard the future of our planet and communities, transformative and sustainable approaches are needed. NbS are regarded as instrumental approaches to address the most pressing challenges facing humanity, and provide social, environmental, and economic co-benefits.

NN annual event in Brussels, on June 7, 2023, gathered the NbS community with the aim of creating opportunities and maximising the impact and uptake of nature-based solutions across sectors. The event tried to answer what is the transformational potential of NbS and what transformations are needed to widen the use of NbS. The meeting was dedicated to creating impact, enabling collaborations across sectors, finding synergies between sectors, sharing expertise in addition to knowledge while focusing on biodiversity governance.

The Cluster Meeting brought together more than 85 participants, representing all Taskforces, several EU NbS projects, and stakeholders from NN and the European Commission. The meeting provided the opportunity to take stock of the main outcomes of the Taskforces and explore the work of and lessons learnt from several EU NbS projects across different ecosystems.

In the same event, the Water Europe Director of Operations, Mr Andrea Rubini, had an interview where he could pose the accent on the need of considering water as one sector that can be largely, and in an increasing number of cases is already, involved within the concept of NbS, as healthy and functioning ecosystems are vital for water security as they ensure the delivery of water-related and water-dependant ecosystem services. In addition, the interview focused on how different sectors can be engaged in NbS implementation, and on the role played by large networks to ensure cross-sectoral collaborations for NbS implementation and adoption.

3.3 Water Europe Working Group on NbS

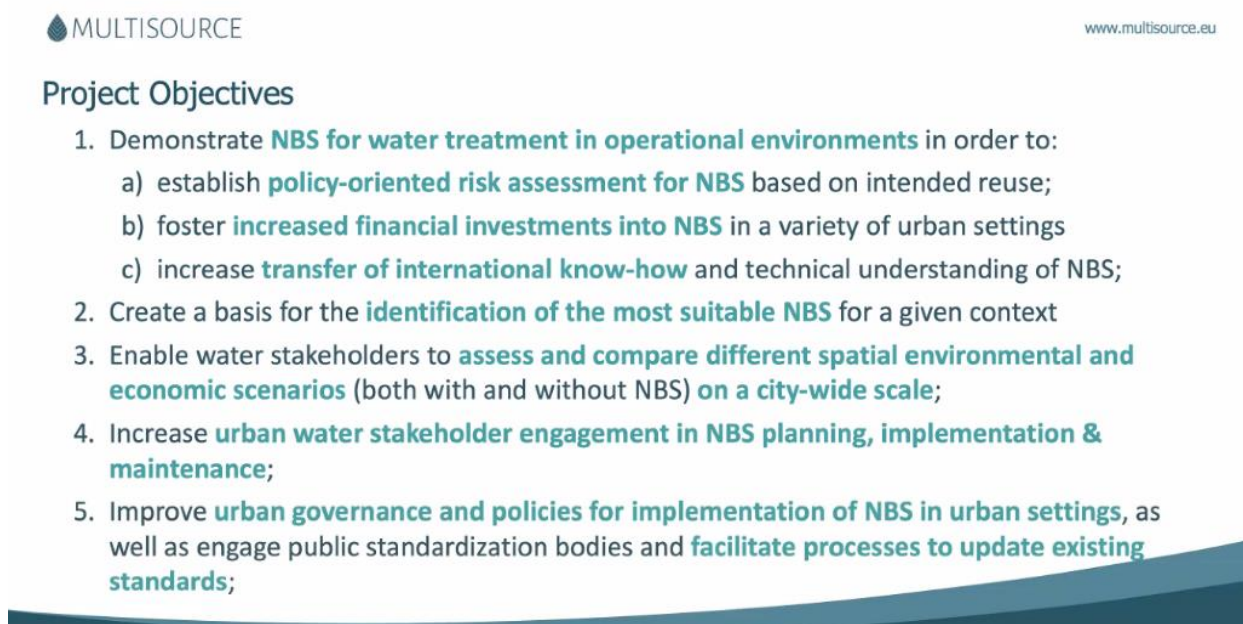
At the core of Water Europe's collaborative endeavors lie the Working Groups (WGs), acting as pivotal facilitators for member cooperation and coordination. These WGs are wholly member-driven and serve as the cornerstone of the WE community. They contribute technical and scientific expertise across various thematic areas, addressing European-level water-related challenges, needs, and opportunities.

Within Task 7.3 - Clustering activities, MULTISOURCE was invited to participate in the Water Europe Working Group on Natural-Based Solutions (WG NbS) meeting, scheduled in conjunction with the Water Market Europe (WME) event. The primary aim of this invitation was to introduce the project to a discerning audience of domain experts. The virtual convening of the WG on NbS took place in March 2022 during the "Boost your business!" edition of the Water Market Europe 2022 event.

The focus of the WG NbS is to cultivate research, development, and implementation efforts related to Nature-based Solutions within the realms of both public and industrial water sectors. The online meeting session, organized by Kamal Azrague (SINTEF) and Frédéric Cherqui (INSA Lyon), witnessed the active participation of 42 NbS experts. MULTISOURCE was accorded a special invitation to this event, affording the project an opportunity to engage in discussions regarding its objectives and anticipated impacts.

Ms. Jaime Nivala, the project coordinator for MULTISOURCE, presented a comprehensive overview of the project to the assembly of NbS experts. Figure 3.2 encapsulates a screen capture of one of the slides from the presentation.

Figure 3.2 MULTISOURCE's slide on project objectives



MULTISOURCE www.multisource.eu

Project Objectives

1. Demonstrate **NBS for water treatment in operational environments** in order to:
 - a) establish **policy-oriented risk assessment for NBS** based on intended reuse;
 - b) foster **increased financial investments into NBS** in a variety of urban settings
 - c) increase **transfer of international know-how** and technical understanding of NBS;
2. Create a basis for the **identification of the most suitable NBS** for a given context
3. Enable water stakeholders to **assess and compare different spatial environmental and economic scenarios** (both with and without NBS) **on a city-wide scale**;
4. Increase **urban water stakeholder engagement in NBS planning, implementation & maintenance**;
5. Improve **urban governance and policies for implementation of NBS in urban settings**, as well as engage public standardization bodies and **facilitate processes to update existing standards**;

3.4 IWA World Water Congress

Rapid population growth and increasing urbanisation indicate that the most pressing water challenges of the future lie in urban water management. Water Europe participated at the **IWA World Water Congress & Exhibition 2022 - Water for smart liveable cities** held on 14th September 2022 in Copenhagen that overall counted on 8900 participants. Water Europe co-organised the workshop “*Water-Oriented Living Labs as a mean to engage stakeholders in the development and demonstration of water technologies*” where MULTISOURCE was cited as emblematic project. In this context, drawing from the insights gained through the MULTISOURCE project, it was emphasized that Water-Oriented Living Labs and Nature-based Solutions are complementary elements within the framework of sustainable urban water management. WOLLS serve as valuable testing grounds for community engagement and the development, as well as evaluation, of NbS. Meanwhile, NbS introduce innovative, nature-based strategies for effectively addressing water-related challenges, thus contributing to the creation of more resilient and livable urban environments. The synergy between these components exemplifies a holistic approach to urban water management that benefits both the environment and the community.

3.5 United Nation Water Conference

In the face of the persistent global water crisis affecting 2.2 billion people deprived of access to safe drinking water, sanitation, and hygiene, the United Nations Water Conference has emerged as a beacon. It draws global attention to the multifaceted challenges posed by water, all too often the leading global cause of death.

In today's interconnected world, the paramount importance of water and its profound impact on public health cannot be overstated. The United Nations Water Conference has cast a spotlight on Sustainable Development Goal 6 (SDG6) and the imperative for immediate action. Aligned with this resounding global mandate, the European Union institutions have proactively provided financial support for a range of projects aimed at addressing diverse water quality concerns. These encompass areas such as drinking water safety, emerging contaminants, and the integration of nature-based solutions into urban landscapes.

Within this framework, the MULTISOURCE initiative has taken center stage. It was prominently featured and acknowledged during the United Nations (UN) 2023 Water Conference, held at the UN Headquarters in New York in March 2023. This conference represented a unique generational opportunity to expedite progress towards the universal goal of achieving access to safe water and sanitation for all by 2030.

Of particular note, MULTISOURCE was showcased alongside other significant EU-funded projects during this international forum, such as ULTIMATE and ARSINOE. This served to underscore the European Commission's deep commitment to advancing water research and addressing pressing global water challenges. This collective effort highlighted the European policy perspective on water-related issues.

Moreover, this collaborative platform allowed for the establishment of connections between MULTISOURCE and other policy briefs and projects presented at the conference as above mentioned. By clustering these projects from the European policy perspective, a cohesive approach to tackling water challenges was fostered, promoting synergy and effectiveness in addressing these critical global concerns.

Figures 3.3 and Figure 3.4 depict the placement of the MULTISOURCE project brochures within the event premises.



Figure 3.3 MULTISOURCE brochures in the venue



Figure 3.4 MULTISOURCE brochure showcased

Additionally, during the conference, an array of policy briefs from various projects, including the one developed by MULTISOURCE, was presented. The MULTISOURCE Policy Brief can be accessed via the following [link](#).

3.6 Water Europe Position Paper

By the year 2030, the transition towards a Water-Smart Society, as envisioned through the EU Blue Deal, is anticipated to be in full swing, assuming a pivotal role in Europe's dual transformation towards becoming a green and digital society while achieving climate neutrality.

MULTISOURCE was not only recognized but prominently featured in the [WE Position Paper on the Blue Deal](#)⁵ as one of the four exemplary EU Research projects. These projects were chosen to illustrate the practicality and boundaries of circular nutrient management, positioning MULTISOURCE as a best practice example. This collaborative effort effectively clustered multiple projects from a policy perspective, demonstrating a unified approach towards addressing critical water-related challenges and advancing sustainable resource management.

These best practices, including those from MULTISOURCE, served as the basis for shaping comprehensive recommendations outlining what the EU Blue Deal should encompass. These recommendations are grounded in emerging technologies and societal trends, which are expected to trigger a paradigm shift in how we manage the planet's finite resources and address the impact of climate change.

⁵ <https://watereurope.eu/wp-content/uploads/WE-Position-Paper-EESC-Blue-Deal.pdf>

3.7 Synergies with other EU funded projects

WATER4ALL

MULTISOURCE gained recognition during the partnership kick-off meeting of the EU-funded initiative, Water4All, held in Brussels in October 2022, in which Water Europe leads the Pillar D on “Demonstration of Innovation through WOLLS and Demos”. This acknowledgment was made before an audience comprising 81 partners representing 31 countries of which 23 EU MS. The primary goal of collectively addressing intricate urban water challenges through innovative solutions, particularly the practical integration of Enhanced Natural Treatment Solutions (ENTS) in urban environments, closely aligns with the objectives of the MULTISOURCE project. These combined efforts are directed toward establishing scalable models that can be emulated by other cities contending with similar water-related challenges..

Figure 3.5 captures the moment when MULTISOURCE was mentioned during the W4A Kick-off Meeting, and Figure 3.6 offers a visual representation of the corresponding slide that was presented.

Figure 3.5 MULTISORCE mentioned at Water4All kick-off meeting



Figure 3.6 Slide projected with MULTISOURCE logo



More recently, **MULTISOURCE was mentioned in the Water4All May 2023 Newsletter⁶** to disseminate that the new policy brief has now become available for the project MULTISOURCE in which Water Europe is participating as a partner. The news also provided the link to MULTISOURCE webpage. The new MULTISOURCE policy brief focuses on the expected benefits in the European policy context, linked with the recast of the Urban Wastewater Treatment Directive and the new EU Healthy Soils Strategy. Within this context, the MULTISOURCE project also provides examples of international cooperation between Europe and actors from the Global South.

HYDROUSA

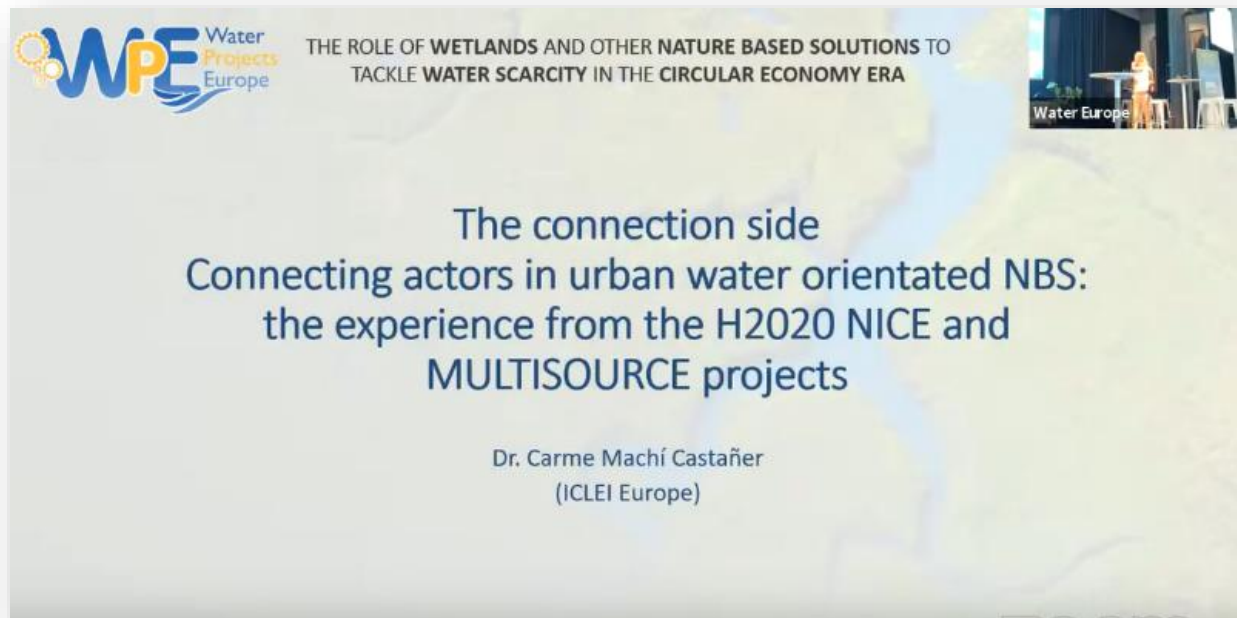
On November 9th, 2022, MULTISOURCE project was presented during the Water Projects Europe 2022 event co-organised with HYDROUSA⁷ (Figure 3.7 captures the initial moment when MULTISOURCE was presented). The event "*The role of Wetlands and other Nature-Based Solutions in tackling water scarcity in the Circular Economy era*" explored initiatives and projects on Nature-based Solutions, discussing their role in restoring and creating wetlands in urban and rural areas for efficient water management and

⁶ <https://www.water4all-partnership.eu/news/eu-projects-new-policy-briefs-published>

⁷ <https://www.hydrousa.org/>

support for the EU Green Deal and the Zero-Pollution Strategy. The event was organised together with the HYDROUSA project, INRAE and INSA Lyon.

Figure 3.7 First slide of MULTISOURCE speech



The recordings of the event can be found following the link:

<https://www.youtube.com/watch?v=NJ5wO-gZ8qU>. MULTISOURCE presentation starts at minutes 2:38:22. The event counts on 182 views at the time of drafting this report.

ARSINOE

ARSINOE⁸ project entitled “*Climate Resilient Regions Through Systemic Solutions and Innovations*” aims at building an ecosystem for innovative climate change adaptation solutions, shaping pathways to resilience by delivering regional innovation packages that build an ecosystem to develop and implement innovative climate change adaptation measures and solutions across Europe. The project brings together 41 partners from 15 countries.

Recognising that climate change is complex and strongly connected to other global challenges, such as food security, water scarcity, biodiversity depletion and environmental degradation, it is not sufficient to use traditional approaches to innovation that focus on only one aspect of the problem. Towards this direction, one of the actions under the project concerns the organisation of thematic seminars on the

⁸ <https://arsinoe-project.eu/>

impact of climate change on water issues with the involvement of all the sister project of the call: *ARSINOE*, *TRANSFORMAR*⁹, *IMPETUS*¹⁰ and *REGILIENCE*¹¹.

The scope of these events is to create a critical mass of exchanged knowledge, intelligence, and experience and capitalise, disseminate, and exploit this critical mass for different or combined purposes for policy development, further Research and Innovation (R&I) collaboration, and market uptake of innovations. Figure 3.8 shows the event on Natural-based Solutions banner.

This seminar about *“How can NbS support climate-change adaptation and mitigation in the water sector? An illustration with urban stormwater management”* was chaired by WE

WG on NbS and carried out with the support of a panel of experts from the sister ARSINOE’s projects and MULTISOURCE. In Figure 3.9 the agenda of the seminar is provided.

The event was participated by 75 participants online and web streamed on Water Europe social media accounts – Twitter, LinkedIn and Youtube - where it reached overall 1.152 viewers. Other 580 viewers more joined the event from the ARSINOE’s Twitter account. At the time of the drafting of this report the YouTube video accounts for 89 views in total.

Figure 3.8 Banner of NbS event



⁹ <https://transformar.eu/>

¹⁰ <https://climate-impetus.eu/>

¹¹ <https://regilience.eu/>

Figure 3.9 Agenda with MULTISOURCE keynote speech

AGENDA

SUBJECT	PRESENTER
Introduction to the Arsinoe Seminars Series and clustering activities	Andrea Rubini
Keynote speech	Anacleto Rizzo Fabio Masi (Multisource)
How can NBS support climate-change adaption and mitigation in the water sector? An illustration with urban stormwater management	Kamal Azrague Frédéric Cherqui
A business model for greener cities: a rapid assessment tool to assess the multi-benefits of storm water management	Jan Cools (TransformAr)
Nature-based solutions in urban stormwater management – Not just an option, but a starting point	Sanna Varis (TransformAr)
Large scale installation of green roofs as NBS for a sustainable urban water management	Elena Cristiano (Arsinoe)
Implementation of NBS to protect the Catalan coastal line against severe events	Queralt Plana Puig (Impetus)
Panel discussion and Q/A	Andrea Rubini (Moderator)
Wrap up and take aways	Andrea Rubini

4.0 Strategic outlook

Looking ahead, the MULTISOURCE project will continue to build on the momentum gained through its clustering activities and collaborations with sister projects to expand the impact of Nature-based Solutions across Europe and beyond. Key priorities for the next phase include:

- **Synergies with other projects and knowledge exchange:** Through ongoing partnerships and Water Projects Europe events, MULTISOURCE will continue to foster collaboration with EU-funded projects, such as NICE and other Horizon Europe initiatives. This synergy will be instrumental in developing cross-sector approaches to urban water management and will further strengthen the MULTISOURCE network through shared best practices and insights. Water Europe will support clustering efforts by introducing relevant projects and facilitating interactions across initiatives, including through potential future activities like the Splashdown series. Additionally, the project plans to organize a dedicated WPE session on gender, informed by results from the gender survey and the social and gender mainstreaming paper, to explore gender inclusion and equity in NbS implementation. Potential WPE on other topics such as governance, citizen engagement, and the NbS tool may help expand engagement with new users, fostering deeper collaboration and knowledge-sharing across the network.
- **Projects session under WME 2025:** In 2025, MULTISOURCE will organise the Water Market Europe edition, taking a central role in Water Europe's flagship event for market outreach. This key event will provide MULTISOURCE with a valuable opportunity to connect and directly engage with relevant stakeholders. Through dedicated sessions, the project will showcase its NbS solutions, foster strategic partnerships, and explore pathways for accelerating market adoption. The event will also include a **Splashdown session** focused on discussing and promoting results from key NbS projects, further supporting clustering and knowledge exchange within the NbS community. Serving as a powerful platform, WME will amplify MULTISOURCE's visibility and facilitate impactful engagement with potential collaborators and investors, reinforcing its role in driving the commercialisation and market uptake of innovative NbS outcomes.
- **Enhancing policy influence:** MULTISOURCE will continue to engage with key stakeholders at the policy level, contributing to the shaping of European and international water management policies. The project's ongoing policy briefs and position papers will provide strategic recommendations, particularly concerning the integration of NbS into urban planning frameworks, financing mechanisms, and climate adaptation strategies. As part of these efforts, MULTISOURCE plans to organize a concluding workshop or webinar in Brussels to present the final policy brief directly to EU policymakers. This event will provide a platform for discussing the project's policy recommendations and insights, including integration of recommendations from other EU-funded projects for the Urban Wastewater Treatment Directive (UWWTD). This workshop will enable a comprehensive exchange with policy stakeholders, enhancing the policy impact of MULTISOURCE's findings.
- **Exploring new opportunities:** The project will remain flexible in exploring new opportunities to address emerging challenges and capitalize on areas of growth. By engaging with a range of networks and task forces, including the TF4 from Network Nature+, the International Water Association (IWA) working group on NbS, and the Water Europe Expert Group on Green Grey Infrastructures (GGI) & NbS, MULTISOURCE aims to strengthen its position within the broader NbS community. These collaborations will support the project's alignment with sector-wide priorities, creating pathways for potential expansion and continued influence beyond the project's current scope.

This strategic outlook provides a roadmap for MULTISOURCE's clustering activities in its final stages, ensuring that the project's impact on sustainable water management is far-reaching and well-integrated serving as best practices for others EU funded projects. By emphasizing policy influence, market

engagement, knowledge exchange, and network expansion, MULTISOURCE will leave a lasting legacy, promoting Nature-based Solutions as a cornerstone for resilient and sustainable urban water management.

5.0 Conclusions

The MULTISOURCE project has effectively demonstrated that clustering is a powerful tool for fostering collaboration, knowledge exchange, and strategic synergies across projects focused on Nature-based Solutions (NbS). Through targeted clustering activities, such as participating in Water Projects Europe (WPE) events and partnering with sister projects like NICE, NetworkNature, and other EU-funded initiatives, MULTISOURCE has amplified its reach and impact, enhancing the visibility and dissemination of innovative NbS solutions for urban water management.

These clustering efforts have proven essential in advancing MULTISOURCE's objectives, facilitating access to shared resources, insights, and best practices that strengthen project outcomes and promote a collective approach to tackling water-related challenges. By uniting with complementary projects, MULTISOURCE has positioned NbS as a key solution for sustainable urban water management, reinforcing its importance for environmental resilience, social benefits, and climate adaptation.

Looking forward, MULTISOURCE will continue to build on this strong foundation of partnerships and shared learning to drive NbS innovation, scale impact, and influence policy frameworks across Europe and beyond. By integrating the knowledge gained from its clustering activities, the project is poised to play a pivotal role in shaping the future of water management, setting a benchmark for sustainable practices and collaborative success within the NbS community. Through these collective efforts, MULTISOURCE exemplifies the critical role of clustering in advancing impactful, sustainable solutions for the complex water challenges facing modern cities.

ANNEX 1: DEBRIEF WPE ON WATER SECURITY

Water Project Europe- MULTISOURCE

02 June 2022

Workshop on Natural Based Solutions for water security and ecological quality in cities. Challenges, pressures and opportunities.



LEGAL NOTICE:

This report reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Table of Contents

Abbreviations	4
Introduction	5
Workshop Agenda	6
Keynote Speech on Natural Based Solutions	7
Natural based solutions for Demo Cases- challenges, pressures and opportunities: Projects Presentation	8
MULTISOURCE	8
NICE	10
HYDROUSA	11
UNaLaB	12
Connecting Nature	13
Discussion Highlights	14
Take aways	16
Relevant EU Policy, Strategies and Regulations	17



Introduction

The workshop on “Nature Based Solutions for Water Security and Ecological Quality in Cities” was organised online on 2nd June 2022 as a Water Projects Europe event, in the framework of the clustering activities of the Horizon 2020 MULTISOURCE Project¹.

The EU-funded MULTISOURCE project intends to demonstrate enhanced natural treatment solutions (ENTS) for a wide range of urban waters and enable users to identify multiple sources for local water reuse, promote increased uptake of nature-based solutions and minimise the discharge of inadequately treated water. The project includes seven pilots treating a wide range of urban waters

This workshop is part of Water Project Europe (WPE) that is a series of events of Water Europe made to learn from and build on the experience of innovating projects working on converging topics. WPE aims at clustering water-related projects by thematic areas to allow them to interact, mutually build on the respective experience, support policy development, and stimulate the market uptake of innovations. The workshop session was co-hosted by Jaime Nivala INRAE (coordinator of MULTISOURCE) and Andrea Rubini (Director of Operations of WE).

The event invited five different NBS projects funded by Horizon 2020 and LIFE Programmes to give their view and experience on the NBS challenges and opportunities. There was a mixture of projects that started recently and projects that are nearing finished.

The event was opened with a key note, followed by the presentations of the projects and their objectives. Next, projects were asked to give an overview of their involvement in the biodiversity and climate strategies. The projects were also requested to provide input on the three dimensions of sustainability of NBS for cities: environmental, social, financial specifically relating to their work as well as insight on supporting and hindering factors of existing regulations and directives. An overview of their contribution to achieving a Water-Smart Society was also mentioned and each project had the opportunity to name discussion statements they would like to talk about.

The workshop on “Nature Based Solutions for Water Security and Ecological Quality in Cities” culminated in an inspiring and participated discussion between the panellists, and then closed by the hosts with the take-away session.

The event was participated by more than 200 registered participants and live streamed on social media.

The participating projects were:

- MULTISOURCE (<https://multisource.eu/>)
- NICE (<https://nice-nbs.eu/>)
- HYDROUSA (<https://www.hydrousa.org/>)
- UNaLaB (<https://unalab.eu/en>)
- Connecting Nature (<https://connectingnature.eu/>)

The panellists:

Kamal Arzague (SINTEF), Frederic Cherqui (INSA), Maria Wirth (alchemia nova), Daiane Trevisan (CETIM), Simos Malamis (NTUA), Laura Wendling (VTT) and Antonia Lorenzo (Bioazul), Panagiotis Balabanis Head of Sector (EC -DGRTD Water - RTD.B.1.001)

All presentations are available at: [Water Projects Europe NBS MULTISOURCE](#)

¹ ModULar Tools for Integrating enhanced natural treatment SOLUTIONs in URban water CyclEs



Workshop Agenda



START	END	SUBJECT
14:00	14:05	Welcome from Water Europe Andrea Rubini (Water Europe)
14:05	14:10	Welcome from MULTISOURCE Jaime Nivala (INRAE)
14:10	14:30	Keynote speech on NBS Kamal Arzague (SINTEF)
14:30	14:45	Presentation MULTISOURCE Maria Wirth (Alchemia Nova)
14:45	15:00	Presentation NICE Daiane Trevisan (CETIM)
15:00	15:15	Presentation Hydrousa Simos Malamis (NTUA)
15:15	15:30	Presentation UNaLaB Laura Wendling (VTT)
15:30	15:45	Presentation Connecting Nature Antonia Lorenzo (Bioazul)
15:45	16:20	Panel discussion (moderated) (Projects' Speakers and POs) and Q/A session
16:20	16:30	Takeaways and conclusions Jaime Nivala and Andrea Rubini



Keynote Speech on Natural Based Solutions

The Keynote speech was prepared by Kamal Arzague from SINTEF in collaboration with Frederic Cherqui from INSA, respectively Leader and Co-Leader of the Water Europe WG NBS.

Kamal Arzague, gave an overview of how Natural Based Solutions can contribute to a Water-Smart Society by addressing different challenges, especially societal challenges such as: unsustainable urbanisation, climate change, biodiversity loss, degradation of the ecosystem services.

The presenter started with a brief introduction of Water Europe's NBS Working Groupe that tries to foster the research, development and implementation of NBS, threw various activities. Some of these activities include:

- Exchanging information and results with different members,
- Discussing different classes and several NBS,
- Providing input in national and European research and innovation programs in the form of white papers, workshops and various communications, exc.
- Facilitate joint research and innovation activities.

Next, the presenter explained the two key terms connected to the workshop which were: **Water-Smart Society** and **Nature Based Solutions**, where he also highlighted the different types, ways of implementation and the numerous benefits they provide that include:

- coastal resilience, climate resilience, biodiversity enhancement,
- green space management, air quality, health and well-being, new economic opportunities and green jobs,
- urban regeneration, social justice and social cohesion, participatory planning
- governance and knowledge building for sustainable urban transformation.

The presenter decided to focus on 5 main NBS in Urban water management, that were:

- open spaces and waterbodies,
- constructed wetlands,
- bioretention areas,
- green roofs
- permeable pavements.

He explained that all of those are to improve the hydrological response of the urban areas and obtaining additional benefits in terms of water quality, increase of biodiversity and use of public area. They are used in order to manage stormwater runoff close to its source, improve the hydrological response of urban areas and reduce pollutant loading, flood risks, stream erosion & negative effects on groundwater.

Finally, the presentation was raped up with examples of lessons learned from past project and an introduction of the EU strategy for NBS.



Natural based solutions for Demo Cases- challenges, pressures and opportunities: Projects Presentation

MULTISOURCE



Who: Maria Wirth (Alchemia Nova)

Presentation Title: MULTISOURCE (ModULar Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs)

MULTISOURCE stands for ModULar Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs. INRAE (France) is the lead partner of the Consortium. It is a Horizon2020 funded program, that started in June 2021 and will last until May 2025. The main objectives of the project are to demonstrate enhanced natural treatment systems (ENTS) pilots in operational environments in order to:

- establish policy-oriented risk assessment for NBS for water treatment (NBS^{WT})
- foster increased financial investments into NBS^{WT}
- increase transfer of international know-how and technical understanding of ENTS

as well as create a basis for the identification of the most suitable NBS^{WT} for a given context; enable water stakeholders to assess and compare different spatial environmental and economic scenarios (both with and without NBS^{WT}) on a city-wide scale; increase urban water stakeholder engagement in NBS^{WT} planning, implementation & maintenance; improve urban governance and policies for implementation of NBS^{WT}, and facilitate processes to update existing standards.

Next, the presenter showed an infographic representing the concept and approach that is used in MULTISOURCE to promote their main objective and introduced its 8 WP.

Then the presenter moved on to answer the question of how MULTISOURCE contributes to climate change mitigation and adaptation explaining that MULTISOURCE contributes to climate change mitigation, by promoting nature-based solutions, which can capture CO₂. It also contributes to climate change adaptation, by promoting NBS that are designed to

- reduce the pressure on urban sewage systems and the environment through local stormwater/rainwater retention and treatment. MULTISOURCE solutions are modular and enable to cost-effectively adapt and expand urban water infrastructure to increased heavy rainfall events.
- increase water availability by capturing and treating stormwater, greywater, and wastewater for reuse. MULTISOURCE solutions enable decentralized treatment and reuse, and thereby to close water cycles locally.

MULTISOURCE also contribution to building sustainable urban NBS in 3 dimensions (environmental, Social and financial) by the following activities:

- 1) Risk assessment Technology adaptation for:
 - enhanced treatment capabilities
 - ability to capture and treat previously untreated discharges
 - water reuse
 - Life Cycle Analysis (LCA)
- 2) Stakeholder engagement framework, which can be used for cities to incorporate NBS into their own urban environments
- 3) Inclusive and gender-sensitive research, design, implementation, and evaluation



- 4) Co-development of new, partnerships-based financing and management models for long-term continuation of pilots (O&M) and replication (long-term)
- 5) Cost-benefit analyses for public and private business models

The presenter also highlighted three main needs that they had seen in terms of institutional or policy instruments that could ensure long term sustainability and scalability of NBS for water treatment as well as some recommendations relating these needs. The areas that were identified include: Policy and financing instruments, awareness and information, as well as bridge organizational silos.

A short description of the contribution of the project towards achieving a Water-Smart Society was also given. They do this by enhanced natural treatment systems for treatment, retention, recovery of rainwater and wastewater for safe reuse – pilots and evaluation; stakeholder engagement frameworks based on needs, relevant interests and opportunities; tools that enable integrated technology selection and city-wide planning for a Water-Smart Society.

A short overview the impact of regulations and directives have on the implementation (and further upscaling) of NBS in urban areas regarding the MULTISOURCE project was given. These were split into two categories:

Supporting factors:

- EU Water Reuse Regulation: Opens the possibility for acceptance, permitting and demonstration of innovative technologies that can recover water for reuse in agriculture, e.g., permits of 'water reuse units' (as opposed to strictly normed wastewater management).
- EU Water Framework Directive: opens markets for NBS, e.g., Italian pilot - treatment of combined sewer overflow, potential for application to widely improve water quality in rivers in Lombardia region).

Hindering factors:

- EU Water Reuse Regulation:
 - Monitoring is costly, limits small-scale decentralized water reuse in particular. Potential solution: development of low-cost sensors (probes) for improved operational control, automation.
 - Only covers reuse for agriculture → limiting in its scope, in particular for urban areas.
- Both not specific to NBS, but NBS can be applied to achieve compliance.

The presentation ended with an introduction to two discussion statement:

How could EU policies promote the planning, implementation and operation & maintenance of decentralized water treatment, storage and reuse?

In a context where water management is planned centrally, which governance practices, measures, projects and tools are needed to facilitate the integration of decentralized, nature-based stormwater management technologies into existing urban environments?



NICE

Who: Daiane Trevisan (CETIM)

Presentation Title: Innovative and Enhanced Nature-based Solutions for Sustainable Urban Water Cycle

The presentation started with a short introduction to the project that included an explanation of the name (NICE stands for INnovative and EnhanCed NaturE-based Solutions for Sustainable Urban Water Cycle), the name of the lead partner of the consortium (CETIM Technological Center), funding program and a call identifier (H2020- SC5-27-2020), budget (~ 5 M€), duration of the project (: 48 months (1st June 2021 to 31st May 2025)), number and type of partners (14 (7 research organizations, 2 big companies, and 5 SMEs) and key objective. The key objectives of the project are:

- 1) To widen the availability of enhanced NBS to provide circular urban water solutions
- 2) Provide key knowledge for the design and implementation of NBS that will help achieve the goal of closing urban water loops.

Next, the presenter explained the projects relationship between NBS, the Biodiversity Policy and the Climate Policy, explaining their contributions to achieving the goals of the tow policies. NICE contributes to the goal of the biodiversity strategy by Innovative and improving NBS at laboratory scales and Urban Real Labs; Implementation scaling up of NBS across Europe to capture, repurpose and treat water; implement at least 9 URLs in Europe, Guidelines and methodologies for BbS implementation as well as Identify obstacles and opportunities for the current regulatory framework Sharing expertise and Enhanced local biodiversity.

Regarding the climate change policy NICE will contribute to the COP25, the EU 2050 climate-neutrality objective, IPCC and SDG 13 'Climate Action'. They aim to increase water available for reuse for different purposes, mitigate the diffuse pollution associated to Stormwater and CSO and Reducing flood risks and urban heat island.

One of the technical objectives of the NICE project is to facilitate technological solutions on NBS for different places. To achieve this, they will first evaluate some barriers and social conditions that are related to the implementation of these technologies. Next they will develop Models to maximize the co-effectiveness and co-benefits for the environment, economy and society as well as develop a comprehensive portfolio of attractively integrated NbS. Other actions include: creating Modelling software with data bank of NBS, Reach NBS with lower cost and Increased business opportunities for installation NBS for water treatment.

By the end the project strives to contribute to the concept of Water smart city and contribute towards adaptation to climate change by Integrating NbS into urban water cycle, reducing pressure on existing freshwater resources, Increased investments into natural water treatment solutions, Improving the quality of urban water bodies, creating sustainable urban water management, Water for reuse and availability.

The main challenge that the project is facing at the moment are the Different requirements and standards (environmental and health) for the safe reuse of treated urban.

The presentation ended with and introduction to two discussion topics:

- 1) What are the main drivers and barriers towards NBS for Water Management.
- 2) Which aspects are related to replication and implementation of these types of technologies.



HYDROUSA



Who: Simos Malamis (NTUA)

Presentation Title: Demonstration of water loops with innovative regenerative business models for the Mediterranean region

HYDROUSA project demonstrates the implementation of low-cost, nature-based and other engineered solutions for the recovery of non-conventional water sources (wastewater, seawater, rainwater and vapour water) to be used in agriculture and for domestic use in the Mediterranean region.

The demo case called HYDRO1&2 for decentralized wastewater treatment plants (WWTP) in Lesbos Greece, shows that energy production in the main treatment line make sense even at small scale (with the capacity of WWTP < 2000 p.e.). It is possible to reduce energy consumption by 15% for plants with < 2000 p.e.; further energy reduction is expected by at least 20% due to optimized operation and energy recovery.

The advantages highlighted in the presentation included: low-cost treatment, nutrient recycling, versatility (fertigation or irrigation), composting of sludge and green biomass and diversified agricultural production (agroforestry). On the other hand, some challenges were also identified. These include: community engagement, dealing with variable flow rates and evidence of cost efficiency.

The project supports the Biodiversity Strategy by using of fertigation & recycled nutrients, reducing pollution from excess nutrients, multi-cropping practices e.g. agroforestry, organic farming and permaculture practices, biodiversity assessment as well as fertigation, agroforestry and CWs.

Regarding climate mitigation and adaptation the HYDRUSA project tackles water scarcity by valorizing non-conventional water sources, contributes to the protection against floods through bioswales and addresses desertification by restoring barren land. It also monitors greenhouse gas emissions and energy consumption within the *HYDROUSA* water loops, implements measures to decrease the energy and carbon footprint of NBS and other systems and produces green energy.

HYDROUSAs contribution to building sustainable urban NBS focuses mostly on the replication of their demo sites. The project helps achieve a WSS by providing: Data/ Control, Autonomy /off grid, Water Quality, Soil moisture/ Automated precision irrigation, Water Quantity/ Valves, and Meteorological station.

HYDROUSA analysed the current policy and legislations related to water supply, wastewater treatment, water reuse and resource valorisation within the context of decentralized state-of-the-art technologies applied in rural areas. It is concluded that the current EU legislative framework does not provide ad-hoc guidelines to close the water loops for a small decentralized system. The table below shows a summary of the parameters to be considered and the link to the relevant EU legislation for different types of wastewater application fields.

The presentation ended with an introduction of two ddiscussion statements.

- 1) Downscaling circular, rural NBS to support their implementation in an urban environment (sewer mining concept, stormwater management, water reuse, urban farming)
- 2) Inclusive water governance to support NBS implementation in cities. Support NBS integration through stakeholder engagement and co-creation



UNaLaB

Who: Laura Wendling (VTT)

Presentation Title: UNaLab & the Story of Stormwater Management in Tampere, Finland



UNaLab is an innovation action that focuses on NBS to enhance climate and water resilience of urban areas with the main objective to develop, via co-creation with stakeholders & implementation of 'living lab' demonstration areas, a robust evidence base & European framework of innovative, replicable, & locally-attuned nature-based solutions to enhance the climate & water resilience of cities.

The presenter identified 4 core ways in which the project contributes to achieving a Water-Smart Society; stakeholder engagement, knowledge & capacity building, collaborative development & implementation of stormwater management solutions and adaptive management informed by modelling, monitoring & scenario building.

The participants learned about how a housing company in Finland used the opportunity of "innovation voucher programme to support small-scale NBS" to partially finance the creation of community gardens. These gardens were vegetable gardens that have rainwater tanks to support plant growth during the summer. The idea behind the "innovation voucher programme" was to encourage people to create solutions by supporting them financially so that they do not have to wait for a public party to finance something for them.

The presenter mentioned that the community engagement has been really important. The project has carried out the following activities relating to the EU Biodiversity strategy: biodiversity surveys, citizen observations, and citizen science monitoring activities. For the future they are planning to have a Pollinator Bioblitz monitoring challenge that is planned for summer 2022, additional river restoration and water monitoring projects as well as outcomes informed preparation of city roadmap for green areas and stormwater management.

Regarding the Climate Policy the project has contributed to reducing carbon emissions and mitigating and adapting to climate change and its impacts. In addition, the project has informed relevant local policy actions. Other significant actions include:

- Reduced energy use/CO₂ emissions from centralized treatment of stormwater and seepage water
- Reduced flood peak height and extent of flooding
- Improved quality of stormwater entering receiving surface waterbodies
- City of Tampere has targeted carbon neutrality by 2030
- Carbon footprint calculations of UNaLab NBS highlight significance of material selection
- Full carbon accounting in progress to account for C storage and sequestration in soil and vegetation

Key Lessons Learned relating to Policy Implications had been highlighted by the presenter. These included:

1. Embedding NBS within existing regulations and work processes can be challenging
2. Collaborative, inclusive processes underpinning NBS actions build trust and commitment

Finally the presentation ended with an introduction of three discussion statements:

- 1) How can we more effectively gather & exploit existing knowledge from preceding related concepts whilst fully acknowledging and integrating the unique aspects that differentiate NBS and add value?
- 2) How can we better understand and convey to stakeholders the concept of adaptive management, and how can the process of NBS management in the longer term be supported by advanced digital technologies?
- 3) How extensively should NBS be managed to maintain ES over time?



Connecting Nature

Who: Antonia Lorenzo (Bioazul)



Presentation Title: Connecting Nature - COproductionN with NaturE for City Transitioning, INnovation and Governance

Connecting Nature is a H2020 project with a consortium of more than 30 partners within 16 European countries, and additional scientific hubs. They have been co-working with local authorities, communities, industry partners, NGOs and academics who are investing in the large-scale implementation of nature-based projects in urban settings.

NBS and Biodiversity Policy:

10 city NBS exemplars about re-naturing urban areas.

Measuring impact on biodiversity remains a big challenge.

Resources produced by the project that can help in assessing the impact of NBS:

- i) Technical solutions guidebook
- ii) Impact assessment guidebook
- iii) Review of 93 environmental indicators
- iv) Evaluating the Impact of Nature-based Solutions: A Handbook for Practitioners
- v) CO-IMPACT tool

NBS and Climate Policy

The potential for alignment of NBS with other mainstream policy fields is vast. In climate change policy there is clear evidence of the contribution of NBS to reducing carbon emissions, climate adaptation and mitigation. Resources:

Institutional embedding and alignment of NBS with city strategic policies and priorities, and the United Nations Sustainable Development Goals (SDGs)

Governance guidebook

Co-production guidebook

The three dimensions of sustainability of NBS for cities: Environmental, social, financial

Large-scale public and private investment at institutional level and policy instruments can play an important role in incentivising landowners, infrastructure owners and planners, and citizens to invest in NBS and contribute to the protection and resilience of water urban ecosystems. Resources:

- Connecting Nature Framework
- Finance and Business Models Guidebook
- NBS Business Model Canvas
- CN Enterprise Platform – “Community on NBS for Water Management” (50 NBEs - 15 countries, 525 users)

Present how regulations and directives impact (e.g., support or hinder) the implementation (and further upscaling) of NBS in urban areas.

“The vital role of nature-based solutions in a nature positive economy, 2022, European Commission, Directorate-General for Research and Innovation, <https://data.europa.eu/doi/10.2777/307761>”

- Key issues and recommendations:

Standards, measurement and valuation, public policy, economic opportunities, capacity building and awareness raising

The presentation ended with an introduction to two discussion statements:

- 1) Public procurement as a powerful driver for market stimulation of Nature-based Solutions
- 2) Nature-based Solutions playing a relevant role to contribute to circularity challenges in cities



Discussion Highlights

Andrea Rubini:

Can public procurement facilitate the adoption of NBS?

Laura Wendling:

Absolutely. In UNaLab we have established Nature Based Solutions in some Living Lab areas so that the procurement rules are relaxed compared to the public procurement processes that are standard within the cities. That has really helped in getting the stakeholders involved in defining solutions and some of the local material producers.

Andrea Rubini:

How can we see the leverage to putting better together the public and private sector of NBS?

Maria Wirth:

There are many different ways. One example is the real estate development process where there are a lot of public housing agencies who are often more sustainability oriented as part of their policies but often lack the know-how and the network compared to private companies that have both the know-how and the technologies. Evidently there is a need for a partnerships here. Knowledge exchange and the consultations processes related to the tendering for the construction companies or the architecture firms ect. is also something to be taken into account.

When it comes to financing in the long term, the operation and maintenance of NBS is something that in the private sector plays a key role. Regarding urban development, planning the sites and implementing the construction it is really the maintenance that has a huge impact and constitutes the main barrier. Even if someone from the construction sector understands that it would be good to have more green spaces and more innovative greening, it is simple very costly to maintain as compared to concrete. This is why more often than not they concrete will be chosen, allowing the investor to make a profit bigger financial profit. This requires a lot more involvement steering from the public sector.

Andrea Rubini:

If we have to make a choice between grey infrastructure and green infrastructure, that we can include in NBS, then the choice of grey infrastructure might be even more costly because nature is able in principle to maintain itself, using the nature cycle. At the same time to invest in grey infrastructure means to invest in concrete and steel infrastructure that cannot repair itself. So we need a lot of investments. Maintenance is a big question mark when it comes to decide on what to invest in.

Antonia Lorenzo:

The experience of Bioazul in the implementation of vertical green structures on the city buildings can be seen as a winning modality for a sustainable balance between the investments for the green structures – where the public sector plays a vital role - and the costs for the maintenance that can create the necessary leverage to involve the private sector and the users.

Laura Wendling:

When we think of water management alone it is tempting to only look only at the cost or the benefit for water management regarding the infrastructure. On the other hand, when we start to add the co benefits we consider that Nature Based Solutions or blue-green-grey integrated infrastructures can provide all sorts of benefits some of which are more tangible, much more difficult to measure.



Taking into account what makes our urban areas pleasant and liveable and what are the potential long term cost of health care, particular to mental healthcare issues is also an important point. During the Covid pandemic we saw a lot of this which underlined how important our green spaces became. So on the one hand we can consider our green spaces as places for water management, to reduce run off, increase infiltration, recharge our aquifers and improve the quality of the water that is running to the water surface bodies. On the other hand these green spaces provided a place for stress release and recreational opportunity as well as reportedly improved the mental health of individuals during a really difficult time in all of our lives. That is just a really tiny example of why we need to consider the full range of benefits when we talk about the costs and benefits and making comparisons.

Maria Wirth:

When we are making cost benefit comparisons it is really important to consider the multiple benefits that NBS can have. If we compare over a long time the operational costs of NBS to that of concrete, the second will be much cheaper. If we factor in all the maintenance of peoples wellbeing or public health or even just building, cooling or infrastructure maintenance from flooding ect., NBS becomes potentially more financially attractive and that is definitely a calculation we need to make and publicise much more.

Simos Malamis :

I come from a country where the public procurement is usually the one that bids the lowest and the cheapest gets the work so I think that integrating in the public procurement co-benefits not favouring per say NBS building on the benefits like energy efficiency, water circularity, water re use, decreasing the heat waves ect. All these important aspects could be integrated and provide an advantage to the one that select these solutions. Also NBS can be low cost solutions. There are also hybrid solutions that could also reduce the footprint of NBS.

Andrea Rubini:

Making a choice between centralised and decentralised solutions is something that we saw today as well as the matter of investment, the cost of maintenance and also over coming this culture problem about the adoption of NBS in a new vision about bringing back nature to cities. It is a cultural change and an investment challenge. There are policy implications in terms of how policy and legislation can support this important change. Can the choice between centralised solutions and decentralised solutions support the adoption of NBS in the long term?

Panagiotis Balabanis :

It is important to bring different types of views and different types of projects. Here we have a really nice example of projects which have been funded within the biodiversity nature based solutions part of environmental program but then the projects are working more on water, sustainable management of water resources. There you can see really good examples the world of NBS has really large range of type of activities that sometimes might not have the term of NBS per say.

NBS can support finding a better balance between the centralised and decentralised solutions for urban areas. Projects can also provide guidance to the actors in charge of the implementation of NBS which nature goes beyond the pure technical areas.

The EU Missions of Horizon Europe are also important to mobilise new policy tools and financing resources for NBS. Several of the Missions are water related and hence represent important opportunities for the NBS sector to improve and expand.

Additional opportunities for NBS are represented by the work programs of Horizon Europe and the NextGenerationEU Programme that deploys important resources at national level in the EU MS.



Take aways

Andrea Rubini:

- We really need to work in a systemic approach and all forces and resources need to join hands to bring really back nature to cities, to our societies in general.

Jaime Nivala:

- It is clear that there is a wide range of perspectives to take into account when we are looking into NBS especially in the urban environment and those related to water management.
- There is calls for dealing, identifying the full range of co-benefits that are available in these systems. This still seems to be an obstacle that we are yet to overcome taking into account both the tangible and the intangible benefits.
- Technology development needs intensification specifically for urban areas. Among other things looking towards as a collateral group providing guidelines and recommendations for policy makers.



Relevant EU Policy, Strategies and Regulations

Biodiversity Strategy

https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

FR Fertilising Products Regulation (EU) 2019/1009

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R1009>

European Green Deal

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596443911913&uri=CELEX:52019DC0640#document2>

ROPL Regulation on organic production, labelling and control 889/2008/EC

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008R0889>

RSMLCF Regulation setting maximum levels for certain contaminants in foodstuffs 1881/2006/EC

<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32006R1881>

RWRA Water Reuse Regulation (EU) 2020/741

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0741>

SSD Sewage Sludge Directive 86/278/EEC

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31986L0278>

UWWTD Urban Waste Water Treatment Directive 91/271/EEC

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31991L0271>

WFD Water Framework Directive 2000/60/EC

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060>



ANNEX 2: DEBRIEF WPE ON WATER SCARCITY

Water Projects Europe

MULTISOURCE

7 November 2022

Workshop on the role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era



WATER PROJECTS EUROPE 2022

THE ROLE OF WETLANDS AND OTHER NATURE BASED SOLUTIONS TO TACKLE WATER SCARCITY IN THE CIRCULAR ECONOMY ERA

📍 HYBRID EVENT: LYON & ONLINE

7 NOVEMBER 2022
14:00-17:00

Logos: Water Europe, ICWS 2022 LYON FRANCE, HYPROUSA, IWA WETLAND SYSTEMS FOR WATER POLLUTION CONTROL



These projects have received funding from the European Union research and innovation programmes under different grant agreements

LEGAL NOTICE:

This report reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Table of Contents

Introduction.....	4
Workshop Agenda.....	6
Natural based solutions like Wetlands for Water Scarcity challenges, pressures and opportunities:	
Projects Presentation	7
HYDROUSA.....	7
COST Action Circular Cities	8
MULTISOURCE	8
NICE.....	9
FIT4REUSE.....	10
Presenting the perspectives of different actors on Wetlands and NbS in tackling water scarcity in the Circular Economy	11
The governance side	11
The implementing side	11
The financing side	12
The connection side	12
Discussion Panel Highlights	13



Introduction

The workshop on “The role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era” was organised in Lyon, France, and online (hybrid event) on 7th November 2022 as a Water Projects Europe event, as part of clustering activities of T7.3 planned in WP7 (Communication, Clustering, and Dissemination) of the Horizon 2020 MULTISOURCE Project¹.

The EU-funded MULTISOURCE project intends to demonstrate enhanced natural treatment solutions (ENTS) for a wide range of urban waters and enable users to identify multiple sources for local water reuse, promote increased uptake of nature-based solutions and minimise the discharge of inadequately treated water. The project includes seven pilots treating a wide range of urban waters.

This workshop is part of Water Project Europe (WPE) that is a series of events of Water Europe made to learn from and build on the experience of innovating projects working on converging topics. WPE aims at clustering water-related projects by thematic areas to allow them to interact, mutually build on the respective experience, support policy development, and stimulate the market uptake of innovations. The workshop session was co-hosted by IWA, INRAE/INSA, HYDROUSA, and Andrea Rubini (Director of Operations of Water Europe).

The event invited six NBS recently initiated projects and one almost completed project (HYDROUSA) funded by Horizon 2020, and COST to give their view and experience on the NBS challenges and opportunities.

The event was opened by a keynote speech, followed by the presentation of the projects and their objectives. The panellists presented a variety of perspectives on Wetlands and NbS in tackling water scarcity in the Circular Economy. In particular, they provided some input on the four sustainability strands of the NbS for wetlands: governance, implementation, financing, and connectivity, as well as provided insights on the supporting and hindering factors of existing regulations and directives. An overview of their contribution to achieving a Water-Smart Society was also mentioned.

Starting from the critical mass of knowledge built up by the HYDROUSA project, the panel discussed solutions and barriers that can foster or hinder NbS as a tool for restoring and creating wetlands in urban and rural areas for efficient water management and support the achievement of the objectives of the EU Green Deal and the Zero-Pollution Strategy. The focus was on:

- Promote resource recovery and circularity in the water sector by the implementation of NbS and the integration of green with grey infrastructure
- Enhance a sustainable urban water management cycle through constructed and already existing wetlands.
- Restore degraded wetlands using Nature-based Solutions to improve the resilience of ecosystems, toward a zero-pollution goal for water and the ecosystems.
- Promote models to make wetlands an attractive deal for society, business, and the environment, supporting climate change adaptation and mitigation.
- Develop smart governance policies and processes for wetlands in cities and towns to support and optimise stakeholders’ engagement and decision-making for a Water-Smart Society

¹ ModULar Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs



The workshop on “The role of Wetlands and other Nature-Based Solutions to tackle Water Scarcity in the Circular Economy Era” concluded with a participatory discussion among the speakers.

The event was participated by more than 70 registered participants and live streamed on social media. The recording stored on youtube – available at the link <https://www.youtube.com/watch?v=NJ5wO-gZ8qU> - can count on 170 views at the time of the drafting of this report.

The participating projects were:

- HYDROUSA (<https://www.hydrousa.org/>)
- SOLU-BIOD
- COST Action Circular Cities (<https://circular-city.eu/>)
- **MULTISOURCE** (<https://multisource.eu/>)
- NICE (<https://nice-nbs.eu/>)
- FIT4REUSE (www.fit4reuse.org)

The panellists:

Simos Malamis (NTUA), Xavier Le Roux (BioEEnViS), Guenter Langergraber (BOKU), Fabio Masi (Iridra), Daiane Trevisan (CETIM), Attilio Toscano (University of Bologna), Francesca Framba (Metropolitan City of Milan), Birgit De Bock (AquaFin), Carme Machí Castañer (ICLEI), Titouan Graff (IWA), and Marco Beroš (European Investment Bank)

All presentations are available at: [07.11.2022 - WPE2022 \(HYDROUSA\)](#)



Workshop Agenda



TIME	SUBJECT
14:00-14:15	Welcome from HYDROUSA, IWA and Water Europe 2 – 3 poll questions
14:15-14:30	Keynote speech (HYDROUSA), Simos Malamis, NTUA, Project Coordinator
14:30-15:20	Projects Presentation <ul style="list-style-type: none"> - SOLU-BIOD Xavier Le Roux, BioEEnViS - COST Action Circular Cities: Guenter Langergraber, BOKU - MULTISOURCE, Fabio Masi, Iridra - NICE, Daiane Trevisan, CETIM - FIT4REUSE Attilio Toscano, University of Bologna
15:20-15:40	Networking coffee
15:40-16:25	Presenting the perspectives of different actors on Wetlands and NbS in tackling water scarcity in the Circular Economy The governance side Francesca Framba, Metropolitan City of Milan The implementing side Birgit De Bock, Aquafin The financing side Marco Beroš, Senior Expert, Water Division, Projects Directorate, European Investment Bank The connection side Carme Machí Castañer, ICLEI
16:25-16:40	Panel discussion between governance, implementation, investments, and projects about running and future challenges and way to address them (moderated by IWA and Water Europe)



Natural based solutions like Wetlands for Water Scarcity challenges, pressures and opportunities: Projects Presentation

HYDROUSA

Simos Malamis (NTUA)



Demonstration of water loops with innovative regenerative business models for the Mediterranean region

HYDROUSA project demonstrates the implementation of low-cost, nature-based and other engineered solutions for the recovery of non-conventional water sources (wastewater, seawater, rainwater and vapour water) to be used in agriculture and for domestic use in the Mediterranean region.

The project supports the Biodiversity Strategy by using of fertigation and recycled nutrients, reducing pollution from excess nutrients, multi-cropping practices e.g. agroforestry, organic farming and permaculture practices, biodiversity assessment as well as fertigation, agroforestry and CWs. The results of agroforestry by using reclaimed water in the years 2022 compared to 2021, showed a significant increase in plant height and crop production of maize when reclaimed water is used for irrigation with minimum fertilizer requirements.

HYDROUSA's contribution to building sustainable urban NBS focuses on the replication of their demo sites. HYDROUSA also from a social point of view created a fertile environment for citizens: Ethnobotanical studies based on locals input were conducted, Salinity, pH and microbial contamination as main water quality parameters to monitor were identified by locals, some vegetable boxes were produced from the circular production of HYDRO 6, and 22 job opportunities from locals directly contributing to HYDRO development were created. Overall, more than 100 citizens are participating in co-creation activities.

SOLU-BIOD

Xavier Le Roux (BioEEnViS)

Transformative change towards sustainability through Nature-based Solutions

NbS have great potential to provide effective responses to societal challenges like climate change and creating new jobs, improving human well-being and preserving biodiversity. While usual engineered solutions are fixed, Solu-BioD is an integrated programme that aims to promote the development of NbS as transformative responses to environmental change based on the potential of nature. These solutions are systemic, adaptable, resilient and sustainable.

Nature-Based Solutions serve as protection, restoration and sustainable management of (socio)ecosystems to tackle societal challenges. NbS always include a benefit for biodiversity, while generating social, economic, and environmental advantages. Four main knowledge gaps that have to be filled have been identified: the role of Genetic Diversity and Evolutionary Potential, what are the norms, rules, financial tools, and governance systems favoring NbS success, how to evaluate these very holistic solutions correlated to the scaling up of the aforementioned mechanism, and the necessity to build scenarios and models for NbS under global challenges.

The goal of Solu-BioD is to operate Transformative Changes for the environment, but first in the Research Environment itself, starting from modifying the agenda towards a more systematic approach. That leads to a deep understanding of the biological, economic and social dimensions of NbS, which brings to the rethink of the access to information, training and education. In order to achieve that, the project will fund Living Labs, networks, equipment, education, training for professionals, and it will also lunch calls for research projects and chairs for excellence.



These projects have received funding from the European Union research and innovation programmes under different grant agreements

COST Action Circular Cities

Guenter Langergraber (BOKU)



Implementing nature-based solutions for creating a resourceful circular city

COST Action Circular Cities is an innovative project that started in 2018, with the core belief that if cities do not adapt their current infrastructure and resource management, they will not be able to cope with these challenges. To build adaptive cities, Nature-Based Solutions (NBS) are one element that can help to achieve this transition.

COST Action is a peculiar system, aimed at funding networking activities, such as meetings, workshops, conferences, training schools, short-term scientific missions (STSMs) and dissemination activities. As for Research, each participant has its Research Sources, and the project tries to harmonize their outcomes. The network counts now 40 countries, more than 650 people. The main outcomes so far have been a report on the state of the art and existing case studies, the catalogue of potential solutions for providing/recovering resources with NBS, and a guideline on combined NBS and CE possibilities within the urban environment.

The participants learned about the main urban circularity challenges related to the shift from a linear economy to a circular one: how to minimize linear import and consumption of new resources, and how to minimize waste production. Nature-based Solutions can indeed address specific Urban Circularity Challenges and close the urban cycles. They can serve, for example, for getting new functions out of new buildings, reuse of nutrients, wastewaters, food and biomass production etc.

NbS can be technologies, but also spatial units - such as urban forests - and soil intervention - such as phytoremediations and composting. As a result, the next steps will be their Guidance Tool to use their framework, a training course for city officials/administrators/planners, and a Circular City On-line course

MULTISOURCE

Fabio Masi (IRIDRA)



MULTISOURCE (ModULar Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs)

MULTISOURCE stands for ModULar Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs. It is a Horizon2020 funded program, that started in June 2021 and will last until May 2025. The main objectives of the project are to demonstrate enhanced natural treatment systems (ENTS) pilots in operational environments in order to:

- establish policy-oriented risk assessment for NBS for water treatment (NBS^{WT})
- foster increased financial investments into NBS^{WT}
- increase transfer of international know-how and technical understanding of ENTS

as well as create a basis for the identification of the most suitable NBS^{WT} for a given context; enable water stakeholders to assess and compare different spatial environmental and economic scenarios (both with and without NBS^{WT}) on a city-wide scale; increase urban water stakeholder engagement in NBS^{WT} planning, implementation & maintenance; improve urban governance and policies for implementation of NBS^{WT}, and facilitate processes to update existing standards.



MULTISOURCE contributes to water saving, recycling and reuse, by promoting nature-based solutions, which can provide new resources as appropriately treated effluents, “new water”, recovered nutrients, and biomasses. It also contributes to water scarcity issues, by promoting NBS that are designed to reduce the pressure on urban sewage. MULTISOURCE solutions are modular and enable to cost-effectively adapt and expand urban water infrastructure to increased heavy rainfall events. Increase water availability by capturing and treating stormwater, greywater, and wastewater for reuse. The solutions also enable decentralized treatment and reuse, and thereby to close water cycles locally.

Main outputs of Multisource are the Monitoring of seven ENTS pilots in operational environments; the MULTISOURCE NBS^{WT} Selection and Design Tool; MULTISOURCE Planning Platform, comprised of modular, open-source urban water planning tools that enable systematic assessment of NBS^{WT} on a city-wide scale; case studies and roll-out of MULTISOURCE tools in partner cities; and policy recommendations for increased uptake of urban NBS^{WT}.

NICE

Daiane Trevisan (CETIM)



Innovative and Enhanced Nature-based Solutions for Sustainable Urban Water Cycle

The presentation started with a short introduction to the project (Budget of ~5M€, period of 48 months, 14 partners), to explain then the key ambitions of the project:

- 1) To widen the availability of enhanced NBS to provide circular urban water solutions
- 2) Provide key knowledge for the design and implementation of NBS that will help achieve the goal of closing urban water loops.
- 3) NICE solutions will make available reusable water for different purposes
- 4) Mitigate pollution and runoff
- 5) Provide NbS as an important integral part of the urban landscape

The strategy of the NICE project consists of gathering information, reviewing NbS, and improving the existing solutions, such as green roofs, to treat water in pilot Urban Real Labs and upscale them. The technical objectives of the NICE project go from improvement and optimization of NbS for water treatment, CECs removal, to reducing pressure on existing freshwater resources and create green jobs. Moreover, they aim at reaching NBS with lower cost and Increased business opportunities for installation NBS for water treatment.

Despite some challenges like institutional fragmentation and inadequate regulations, the project strives to contribute to the concept of Water-smart city and contribute towards adaptation to climate change by integrating NbS into the urban water cycle, reducing pressure on existing freshwater resources; increased investments into natural water treatment solutions; improved quality of urban water bodies; creation of sustainable urban water management; and water for reuse and availability.





FIT4REUSE

Attilio Toscano (University of Bologna)

Nature-based Solutions for improving availability of agricultural water resources in the Mediterranean region

The project FIT4REUSE is a non-conventional project, as it is part of the PRIMA programme, supported under the fund of Horizon 2020. The main objective of FIT4REUSE is to provide safe, locally sustainable and accepted ways of water supply for the Mediterranean agricultural sector by exploiting non-conventional water resources, namely treated wastewater and desalted water.

As the project gets closer to the end, the outcomes were several pilot systems in different countries for non-conventional water treatment; the development of a simulation platform for predicting performance of project technologies in conditions different than the experimental ones; the use of treated non-conventional water in agricultural irrigation; holistic assessment of the whole cycle and value-chain of the production/treatment of non-conventional water resources and their actual application; a water reuse safety (risk management) plan to enable safe use of treated non-conventional water; and a multi-stakeholder and multi-level platform for knowledge co-production and a participatory vision building process.

The pilots shown were in Italy, Tunisia, and Greece. In the Imola site pilot, the integrated plant is able to produce the highest quality required by the EU regulations for water reuse in agriculture. Wastewater treatment is extremely important in the Mediterranean region, especially with the undermining effects of climate change, and how NbS is correctly used in this area is promising and effective.



Presenting the perspectives of different actors on Wetlands and NbS in tackling water scarcity in the Circular Economy

The governance side

Francesca Framba (Metropolitan City of Milan)

Metropolitan Sponge City



The Metropolitan City of Milan adapted a strategy, which is also a project, called Sponge City, for a city with a high population density and urbanization, that faces problems such as water runoff, and urban heat islands. By promoting and implementing climate change adaptation measures and concomitantly develop mitigation policies, Milan is paving the way to making the metropolitan territory capable of absorbing extreme climatic events through the implementation of widespread and technologically advanced interventions, paying attention to the impact not only on the environment but also on social vulnerability.

On their roadmap started in 2016, within the metropolitan urban agenda they structured European projects as a partnership, that made possible to acquire knowledge on NbS for urban cities, knowledge of the territory and subsequent assessing and evaluation tools to adapt the solutions to Milan. In numbers, what made the Sponge City project possible: over 90 interventions in public areas feeding the aquifer (Flowerbeds / Drainage trenches, Areas of bioretention, Detention basins etc), a territorial network of 32 municipalities in the metropolitan area, with € 50,194,049.66 in fundings.

From a governance project perspective, it is articulated into different actors, as the starting point is Europe with the Next Gen EU funds, that once they pass to the Italian country through the Ministry of Internal Affairs, which has calls for funds dedicated to metropolitan cities. There is a contract between the Ministry and the City of Milan, called act of obligation, a public law contract, that then pass this agreement between the MC of Milan and the Municipalities and Integrated Water Service Provider. In this structured process, the MIM is the beneficiary of the funds in charge to define a strategy with responsibility for the results.

The implementing side

Birgit De Bock (Aquafin)



An utilities perspective on NBS & wetlands in a circular water economy

Aquafin is a wastewater utility, with 323 wastewater treatment plants in Flanders, 1893 pumping stations and buffer basins, 6.618 km of sewers, and 1200 employees. Since 2013, their vision is to clean water courses, instead of just putting water underground and letting it flow to the river. It is related to wastewater clarification, but also to the environment and harmony with water. Their key word is the multifunctionality of water that truly captures its value. As an example, green small garden in the city of Antwerp were implemented as NbS nourished by rainwater, as well as green walls.

Their goal is to inspire the government and citizens regarding the value of Nature-Based Solutions and what do they look like, and they collected practical solutions on their website to easily display to these actors, that can be filtered according to the place in which the viewer wants to implement them. They want to merge constantly and connect blue and green, from an engineering point of view, together with other fields' experts to integrate visions and knowledge.

One of the main challenges that they are coping is space, paired with a necessary mind shift in municipalities, cities and engineers, as nature is not an exact science, and more complex than theory.



The financing side

Marco Beroš (European Investment Bank)



A Financier's Perspective on Nature Based Solutions in the Water Sector

The EIB adopted the climate strategy years ago and it is committed to lead the financing community in the aim to reach the climate targets. According to their Roadmap and the Adaptation Plan, the EIB wanted to increase its level of support to climate action and environmental sustainability to exceed 50% of its overall lending activity by 2025, but already in 2021 climate action and environmental sustainability financing by the EIB totalled EUR 27.6 Billion (51% of total lending). The reason is to demonstrate that each project which gets funded has a climate action component, either for adaptation or mitigation.

The commitment is also to implement the EU Green Deal, so they updated their environmental and social standards this year, to have a sustainable and inclusive growth and to achieve a just and fair transition to a resilient, low carbon green economy.

Regarding Nature-based Solutions, there is a problem on the definition of the term, that changes between the European Commission and the IUCN. Even if they are similar, but the IUCN published a global standard, that combines the definition with eight criteria and assessment tools, which are currently missing in the European Commission. So far, only few countries adopted the IUCN definition, and that is limiting because for financiers there is the need for common standards, especially for co-funded projects. NbS also need to be boosted as they only attract 3% of global climate fundings.

Highlights from the case-study in Germany are the related lesson learned after 30 years of river restoration of the Emscher and its tributaries: Nature-based solutions take time (10 years or more), the Emscher will never be a natural river (treated effluent content, persistent soil pollution, no full continuity due to infrastructure). Extensive stakeholder consultation pays off: there was not a single NGO complaint in 30 years.

The connection side

Carme Machí Castañer (ICLEI)



Connecting actors in urban water-orientated NBS: the experience from the H2020 NICE and MULTISOURCE projects

To engage with the stakeholders and to better disseminate the knowledge related to the two projects NICE and MULTISOURCE, different actions were taken.

For MULTISOURCE, they designed stakeholders engagement activities. The first step was to map the stakeholders, followed by a co-design stakeholder engagement framework, based on the 3 nurturing questions: why, who and how to engage with, that should be implemented in the following months. As part of this process, a short (1-yr) and long (4-yrs) term strategy will be designed by pilots/partners on a road-map template.

For NICE, also dissemination, knowledge exchange and engagement efforts were done, but in a different way. The NICE Cities Panel (NCP), launched by ICLEI in Spring of this year, connected NICE Urban Real Labs (URLs) and Fellow Sites with new cities that applied to be part of this panel, which enabled to:

- connect with Local Governments and listen to their specific water challenges
- map cities' needs and partners' potential expertise inputs, to further design for NICE capacity-building and knowledge exchange
- involve MULTISOURCE partners in the process of supporting the NCP cities, and bring in their expertise on NBS for a more sustainable urban water cycle



These projects have received funding from the European Union research and innovation programmes under different grant agreements

Discussion Panel Highlights

Andrea Rubini:

The common understanding is that there are problems in legislation, in financing NbS, in developing NbS considering the time it requires. Then there are the benefits and the question mark on how to involve everybody including citizens.

Xavier Le Roux:

It is difficult to have all stakeholders around the same table and have a common vision and answers, because there are different types of stakeholders, some easy to reach, some not, and they will have different opinions and expectations. We need to reinvent governmental systems to address this problem, to avoid selling NbS as a one-size-fits-all solution without including the important aspect of discussion leading to more informed choices.

Simos Malamis:

Sometimes gaps in legislation do not favour natural-based solution and make it difficult the integration of green infrastructures with water technologies.

Francesca Framba

The Metropolitan city of Milan and the Lombardi region changed their legislation in 2019 based on guidelines for the implementation of nature-based solution provided by Iridra. Beside, they can witness some lacks in the administrative side but also in the implementation side, when you have to implement the NBS there are a few problems mainly about rain water and on how we have to treat the rain water that go into the sewer sewage system. So it's really a process going on but we see the necessity to bring some more clearance.

Birgit De Bock

Struggling in the implementation phase is also rised by the Flanders water utility for which legislation now asks to infiltrate water focusing more on quantity while is overlooking quality for the time being. Improvement in quality compliance is expected in the next few years.

Attilio Toscano

It is important to stress that there is the need to have a clear definition of NBS that should be able to cope with other sectors as well. It is not good if each sector reinvents the definition of NBS. The ambition would be that the definition of NBS is suitable for more sectors to allow the different communities to meet and to tackle different challenges and at the same time to avoid to have a definition for water, for forestry, agriculture, for urbanization, for Coastal erosion.

Marco Beroš

As for other standards, also for NBS there is the need of having a better understanding, elaborate the standard in a collaborative process, test it many times to be sure about its suitability for different sectors and different types of projects to be endorsed by the European union, by IWA or by the World Bank or the EIB to really give it the momentum become more important in the the international field of nature-based solutions

Fabio Masi

There is the need to have a common view and holistic approach when looking at the multi-purpose application of NBS and include all the different aspects in terms of benefits that can be obtained by this



kind of adoption. In the design phase, we should consider to include the benefits of using NBS, e.g. their values in the environmental, social and economic fields and stop calling them side benefits. We should include the costs that the society has to pay by losing this kind of benefits for instance efficiency in the long-term maintenance with special attention on how the European policies can help to let the stakeholders understand the importance of the decentralized concept if adopted in a proper way.

Carme Machí Castañer

Regarding decentralisation, I think it is an urban phenomenon that occurs all over the world in different ways. There are many different urban dispersion patterns. Wastewater treatment solutions with NBS are the only way we can address the problem, paying attention making it always at the community level, because if we don't start talking to the community and make them aware of this problem, it cannot be implemented in the regulatory framework as well.

Take aways

- Gaps in legislation do not favour natural-based solution and make it difficult the integration of green infrastructures with water technologies.
- There is the need to have a clear definition of NBS suitable for more sectors to allow the different communities to meet and to tackle different challenges and to cope with different sectors.
- NBS cannot be implemented in the regulatory framework without the direct involvement of communities.
- Development of effective business models for the sustainable management of NBS are needed beyond the necessary investments for realising the NBS.



ANNEX 3: NICE-MULTISOURCE MEETING AGENDA

H2020 NICE and MULTISOURCE CLUSTERING MEETING

“SC5-27-2020–Enhanced natural treatment solutions for water security and ecological quality in cities”

25 June 2021

Hosted via ZOOM, 9h30-12h30 Brussels time

AGENDA

09:30 – 09:35 **Welcome and Aims of the meeting** – *Laura Palomo & Victoria Beaz, REA*

Session I: Setting the scene

15 mins brief presentation each + 5 min for Q&A

- 09:35 – 10:15**
- 1. Introduction to the NBS Taskforces & NBS community - NetworkNature welcome package** – *NetworkNature*
 - 2. Policy overview & opportunities for feedback to policy**– *Julie Delcroix or Tiago Freitas, DG R&I*
-

Session II: Getting to know H2020 NICE and MULTISOURCE sister projects

15 mins each; overview of project objectives and main activities

- 10:15 – 10:45**
- 1. NICE: Innovative and enhanced Nature-based solutions for solutions for sustainable urban water cycle** – *Isaac Fernández, NICE Project Leader*
 - 2. MULTISOURCE: ModULAr Tools for Integrating enhanced natural treatment SOLutions in URban water CyclEs** – *Jaime Nivala, MULTISOURCE Coordinator*
-

10:45 – 11:00 Short break

Session III: Getting more familiar with H2020 NBS Cluster taskforces

15 mins presentation followed by 10 mins discussion and Q&A for each block

- 11:00– 11:50**
- 1. NBS Taskforces 1 & 2 presentations & Q&A (25mins)** – *Laura Palomo REA*
TF1: Data management and knowledge repository
TF2: NBS Impact Evaluation
 - 2. NBS Taskforces 3, 4 & 6 presentations & Q&A (25mins)** – *Victoria Beaz REA*
TF3: Governance, business and financing models
TF4: Communication
TF6: Co-creation and Governance
-

Session IV: Future opportunities and potential next steps

Final session to brainstorm on potential opportunities and next steps in the collaboration

- 11.50 – 12.20**
- 1. Other examples of joint activities** (5mins) – Laura Palomo and Victoria Beaz REA
 - 2. Opportunities and ideas for NICE/MULTISOURCE collaboration** (20 mins)– All
 - 3. Wrap-up of the meeting** (5 mins) – Laura Palomo & Victoria Beaz, REA

12:20 – 12:30 Buffer and End of meeting

Notes:

Please follow the below meeting instructions to guarantee meeting accessibility for all:



A **magnetic hearing loop** is streaming this meeting to the hearing aids of a hearing-impaired person.



Please use a **headset** to ensure good quality sound and **check that your sound settings use the headset microphone as the sound input**. Integrated PC microphones and iPhone earbuds provide poor quality sound. **Please mute the microphone when you aren't speaking.**



Please **check your face** 😊 to ensure it is **well-lit and centered in the screen**. This will enable hearing-impaired participants to get visual cues that help with understanding (i.e., lip-reading)



Say your name + institution each time you speak. Check your speech flow. Do not speak too fast.

Do not bounce too fast from one idea to another. This meeting is being transcribed in real-time. Please give the transcriber the opportunity to do their job properly.



Inclusivity is a common effort. Thank you for doing your part.

Meeting Link: <https://inrae-fr.zoom.us/j/92427689642>

Meeting ID: 924 2768 9642

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.