AWARD

Alternative Water Resources and Deliberation processes to renew water supply strategic planning

D6.4 – Social innovation Factsheet #1

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Disclaimer

This document arises from the European project Alternative Water Resources and Deliberation process to renew water supply strategic planning (AWARD), which has received funding from the European Union, under the Grant Agreement N° 101136987.

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EXECUTIVE SUMMARY

This factsheet (Deliverable D6.4) presents AWARD's social innovation strategy to foster the uptake of Alternative Water Resources (AWRs) and strengthen water resilience across regions. Rooted in Task T6.2 on "Social innovation and capacity building", it supports stakeholders, such as local authorities and utilities, in making informed and inclusive decisions on strategic water supply planning. The approach combines technical, governance, capacity-building, and economic components. It is supported by tools like the Deliberation Support Tool for Territorial Sustainable Development (DST-TSD).

Rather than relying solely on technological solutions, AWARD promotes a participatory and systemic model for implementing AWRs. This model is grounded in real-life demonstrations and multi-actor collaboration. This factsheet is the first in a series designed to build stakeholder capacity and ensure the replicability of the most effective solutions developed through the project.

This Deliverable presents the first Social Innovation Factsheet developed within the AWARD project. **A dedicated 4-page version of this factsheet has been produced to support communication and dissemination activities**. Designed to highlight the key messages and outcomes in an accessible format, it is included in the **Annex** of this deliverable and will be shared through AWARD's communication channels to engage stakeholders and promote project results.

RELATED DELIVERABLES AND WORK PACKAGES' CONNECTION

- WP5: D5.1. Harmonised Pilot Site Interest Groups implementation guidelines including a stakeholder mapping; D5.2-D5.6 on Demo cases implementation reports
- WP6: D6.7: Training Plan; D6.9: Value Proposition and D.6.10: AWARD Exploitation Roadmap; D.6.5: Social Innovation Factsheet #2 (M24); D.6.6: Social Innovation Factsheet #3 (M36)
- WP2: Specifically on the work done with the Local Water Forums under T.2.3 "Policy support and planning towards water supply into action

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V2	26/05/2025	Marwan SHAMEKH (OiEau)	Feedbacks on the structure
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V4	19/06/2025	Sofia PEREZ (UPSaclay), Loup DELADERRIERE (UPSaclay), Anacletto Rizzo (IRIDRA)	Comments from the reviewers compiled
VF	30/06/2025	Ankinée KIRAKOZIAN (OiEau)	Comment integrated into the document

TABLE OF CONTENT

LIST OF FIGURES

LIST OF ACRONYMS

AWR	Alternative Water Resources
CoP	Community of Practice
DC	Demo Case
DST-TSD	Deliberation Support Tool for Territorial Sustainable Development
KER	Key Exploitable Results
LWF	Local Water Forum
NBS	Nature-Based Solutions
SIF	Social Innovation Factsheet
SME	Small and Medium Enterprises
SUDs	Sustainable Urban Drainage Systems
TIG	Transversal Interest Groups
WP	Work Package
WWTP	Wastewater Treatment Plant

I. Introduction

Social innovation plays a vital role in overcoming sustainability challenges, especially those that can't be solved through technology alone. It places equal value on non-technological factors such as institutional dynamics, transformation of practices, collaborative governance, and inclusive economic models, alongside technical progress. This integrated approach is critical to managing complex transitions, especially in sectors like water management, where long-term change depends on both infrastructure and collective action.

In line with the European Commission's definition (2013), social innovation refers to "the development and implementation of new ideas to meet social needs and create new social relationships or collaborations."

Within the AWARD project, this concept is operationalised through a structured process comprising four successive stages:

- Identifying needs that are insufficiently addressed or emerging, such as water scarcity, fragmented institutional responsibilities, or limited citizen trust in water reuse;
- Co-developing inclusive responses that mobilise local knowledge and cross-sectoral collaboration;
- Assessing how well these responses work in practice, drawing on real-life implementation and stakeholder feedback;
- Ensuring that effective solutions are scaled up and institutionalised for broader adoption

To be effective and long-lasting, social innovation must be grounded in four essential dimensions:

- **Technological**: the development or refinement of technical solutions adapted to contextual challenges and the concrete needs faced by communities today.;
- **Capacity building**: providing stakeholders with the knowledge, skills and tools necessaries to adopt and sustain the innovation;
- **Governance**: creating inclusive, transparent and context-aware processes for deliberation and decision-making;
- **Economic and business models**: ensuring that the innovation can be deployed and expanded through viable and accessible funding and operational strategies.

The water management sector, particularly when it comes to digitalisation and the deployment of non-conventional resources, faces persistent structural challenges.

AWARD fully integrates social innovation across its structure and methodology. The aim is to ensure that Alternative Water Resources (AWRs) should not only be technically feasible, but also socially accepted, legally integrated, and economically sustainable.

AWARD fosters active stakeholder participation through Local Water Forums (LWF) and Transversal Interest Groups (TIG), facilitates deliberative processes using the DST-TSD tool, and enhances capacity through tailored support measures. In this way, social innovation is not an optional component of AWARD; it is its operational backbone.

The Social Innovation Factsheets (SIF) developed under AWARD are intended to serve as compact, thematic knowledge tools aimed at fostering the replication and scaling of promising innovations. They target various actors, including scientists, engineers, municipal authorities, service providers, and policymakers, by presenting project outcomes through the lens of social innovation's four dimensions. The ambition is to accelerate adoption and improve decision-making processes through clear, actionable insights that can be directly applied by stakeholders in their own contexts.

Throughout the project, several Social Innovation Factsheets (SIFs) will be produced, each focusing on a major outcome or learning. This first edition concentrates on the topic of Alternative Water Resources, providing an overarching perspective on how AWARD interlinks technological, governance, capacity, and business strategies. The topics of the following factsheets will be identified in collaboration with project partners, based on emerging results and shared priorities.

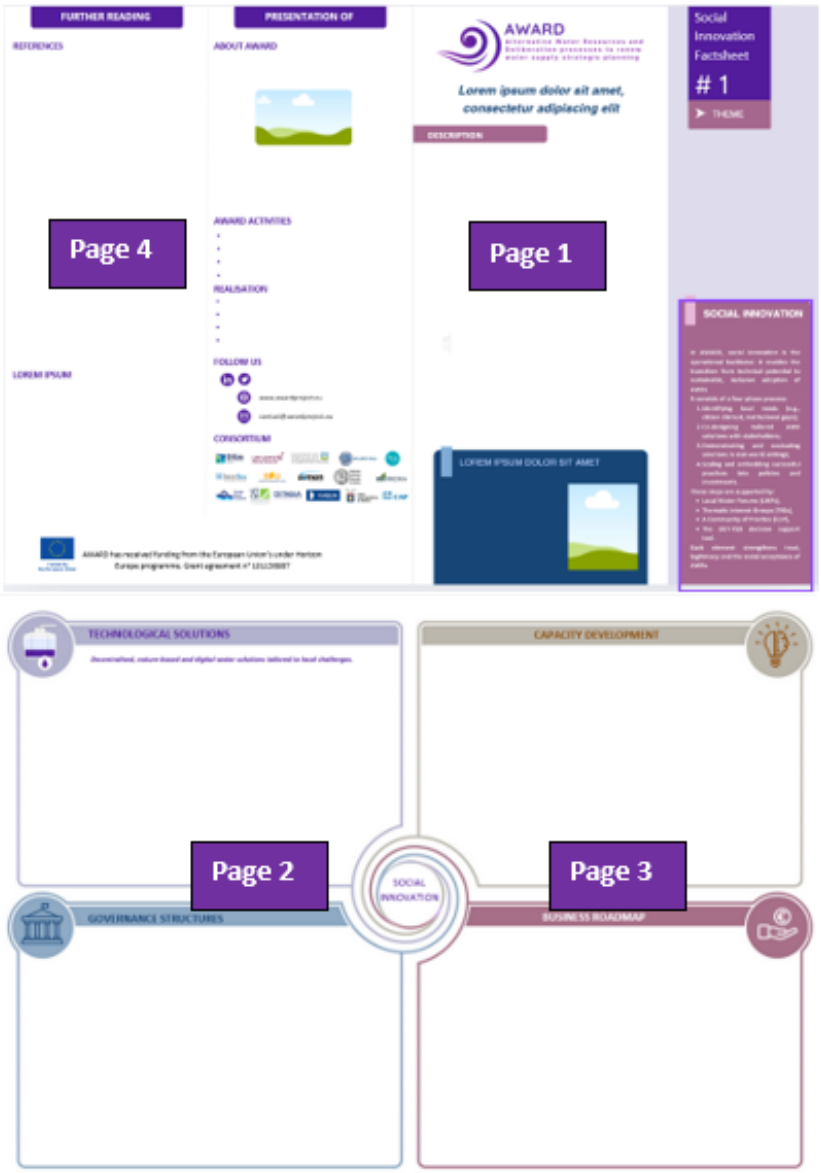
Releasing the factsheets progressively allows AWARD to share results as they become available and relevant, rather than waiting for final outcomes. This approach is intended to help stakeholders engage with the project in real time, experiment with emerging approaches and incorporate intermediate findings into their strategies. It also aims to enhance the visibility and utility of AWARD's contributions by positioning the SIFs as both communication and capacity-building instruments.

This document is the first of a series of AWARD Social Innovation Factsheets. It provides a general overview of AWARD's social innovation strategy with a focus on AWRs. The factsheet is structured as follows:

- General description and the role of social innovation in AWARD
- AWR technological solutions tested in the demo sites and the participatory governance framework
- Capacity development actions and the business roadmap for replication and exploitation
- Further reading and a brief presentation of the AWARD project.

II. Structure of the social innovation factsheet

The Social Innovation Factsheet is composed of four pages laid out on an A3 sheet folded in half (producing four A4-format pages). Each page is dedicated to a specific set of content to ensure clarity and consistency across the factsheet.



Page 1 (front cover, see image 1 on the right side) introduces the concept of social innovation in relation to the project. On the **left section**, a detailed description presents the societal challenge addressed by the initiative, supported by visuals and key project features. On the **right**, general information on social innovation is provided, including its definition, approach and key methodological steps. **Page 4** (back cover, left side of image 1) offers complementary content such as references, links to further resources, and an overview of the project and its main contributors. This page helps contextualise the initiative within a broader framework of research and innovation. The **inner pages** (pages 2 and 3, see image 2) highlight the four core components of the project through a visual quadrant layout:

- **Technological Solutions** (top left): approx. 2300 characters presenting the decentralized, nature-based, and hybrid AWR technologies used across the four demo cases.
- **Governance Structures** (bottom left): approx. 2000 characters detailing the participatory and inclusive governance mechanisms implemented.
- **Capacity Development** (top right): approx. 1800 characters describing training, awareness, and knowledge-sharing activities.
- **Business Roadmap** (bottom right): approx. 1800 characters outlining the process of scaling and replicating innovations into actionable policies and models.

This modular layout facilitates understanding and comparison across dimensions, while visually reinforcing the integrated approach to social innovation.

III. Content of Social Innovation Factsheet #1

III.1 Page 1: Description

AWARD responds to urgent water-related challenges across Europe, such as increasing water scarcity, the need for climate change adaptation, and the evolving regulatory environment, by promoting the integration of Alternative Water Resources (AWRs) into water supply strategic planning. These AWRs include rainwater harvesting, stormwater reuse, treated wastewater reuse, and managed aquifer recharge. The project aligns with key European strategies including the Water Framework Directive (2000/60/EC), and the Water Reuse Regulation (EU 2020/741), as well as the objectives of the Green Deal and the Climate Adaptation Strategy. AWARD mobilises four demonstration cases across Europe: Romania, Italy, Cyprus, and Spain. Each testing AWRs in real-world contexts to address local vulnerabilities, water stress, and institutional needs. In addition, AWARD develops a digital Deliberation Support Tool for Territorial Sustainable Development (DST-TSD) to support multi-stakeholder co-decision-making. It provides a harmonised platform for co-evaluating technical, environmental, social, and economic dimensions of AWR scenarios. This factsheet presents the social innovation approach in AWARD, highlighting how social, technological, governance and economic dimensions interact to support systemic, inclusive and sustainable change.

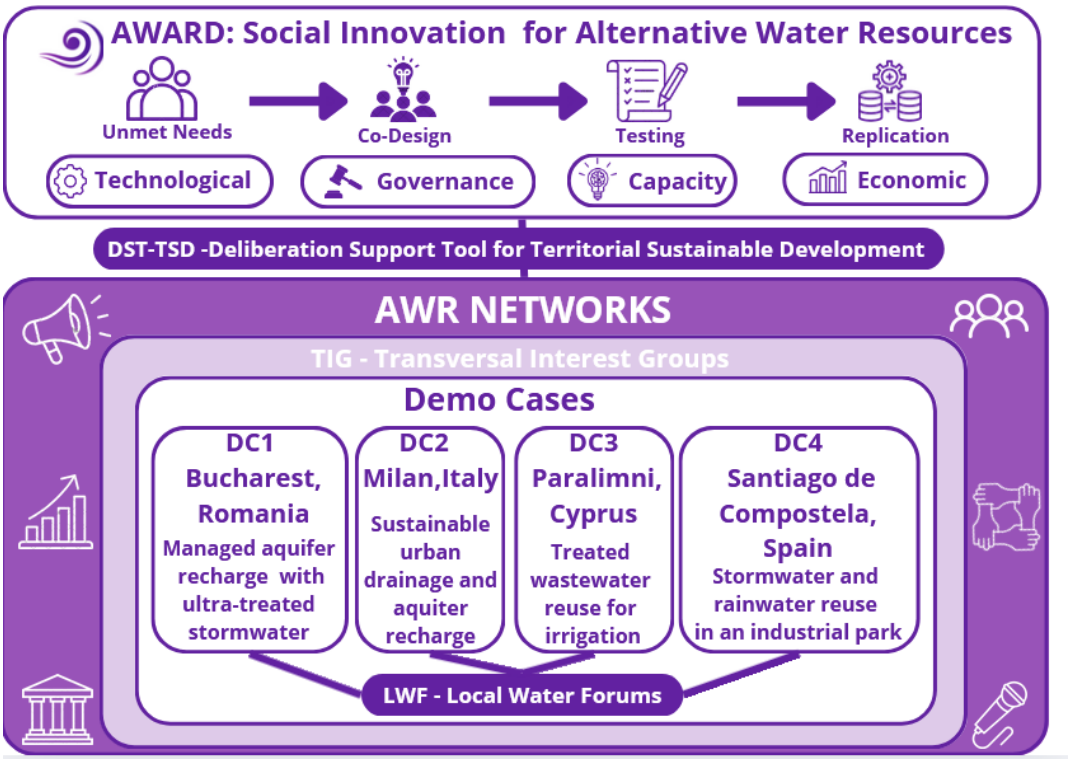


Figure 1 -Social Innovation for Alternative Water Resources

III.2 Page1: Social innovation

In AWARD, social innovation is not limited to the technological uptake of AWRs: it serves as a lever for systemic transformation. It reflects the European Commission's definition as "the development and implementation of new ideas to meet social needs and create new social relationships or collaborations". In AWARD, this is translated into practice through shared governance, stakeholder-led design, and support for viable business models.

The social innovation process follows four structured phases:

1. Identification of emerging needs (e.g., local water scarcity, citizen distrust, planning gaps);
2. Co-design of innovative AWR solutions with local stakeholders;
3. Real-world demonstration and participatory evaluation;
4. Replication and upscaling beyond demo sites.

These dynamics are supported by structured platforms and participatory tools:

- **Local Water Forums (LWFs)** for co-production of knowledge and trust-building;
- **Transversal Interest Groups (TIGs)** focusing on legal, financial, and environmental dimensions;
- A **Deliberation Support Tool (DST-TSD)** enabling transparent scenario comparison and evidence-based planning.

AWARD's social innovation principles are applied across several demo cases, each highlighting unique aspects of water reuse challenges and solutions. For more detailed information on each demo case, please refer to the "Demo Case" leaflets: https://www.awardproject.eu/Leaflet

- **Circus Lake (Bucharest, Romania):** Social innovation here centers on a participatory process involving local actors through all phases. A LWF fosters citizen engagement and coordination with various stakeholders, addressing issues like groundwater depletion and citizen mistrust in public water management.
- **Milan (Italy):** This case showcases social innovation through the reconfiguration of urban stormwater systems using nature-based solutions and strong municipal collaboration. It builds on the LIFE Metro Adapt experience, with technical design and implementation led by project partners, and citizen engagement introduced through participatory monitoring and maintenance activities.
- **Paralimni–Agia Napa (Cyprus):** Social innovation in this demo case focuses on the reuse of reclaimed water for agricultural and urban green areas purposes, strengthening collaboration between water departments, municipalities, wastewater utilities, farmers, and the tourism sector. It also promotes best practices for reclaimed water use and supports greater social acceptance of reclaimed water in agricultural and urban settings.
- **Santiago de Compostela (Spain):** This demo case demonstrates social innovation through the reuse of rainwater and stormwater in an industrial context. It promotes sustainable water management by engaging local authorities, environmental health agencies, and industrial associations, integrating Nature-Based Solutions to shift water culture and enhance acceptance of AWRs.

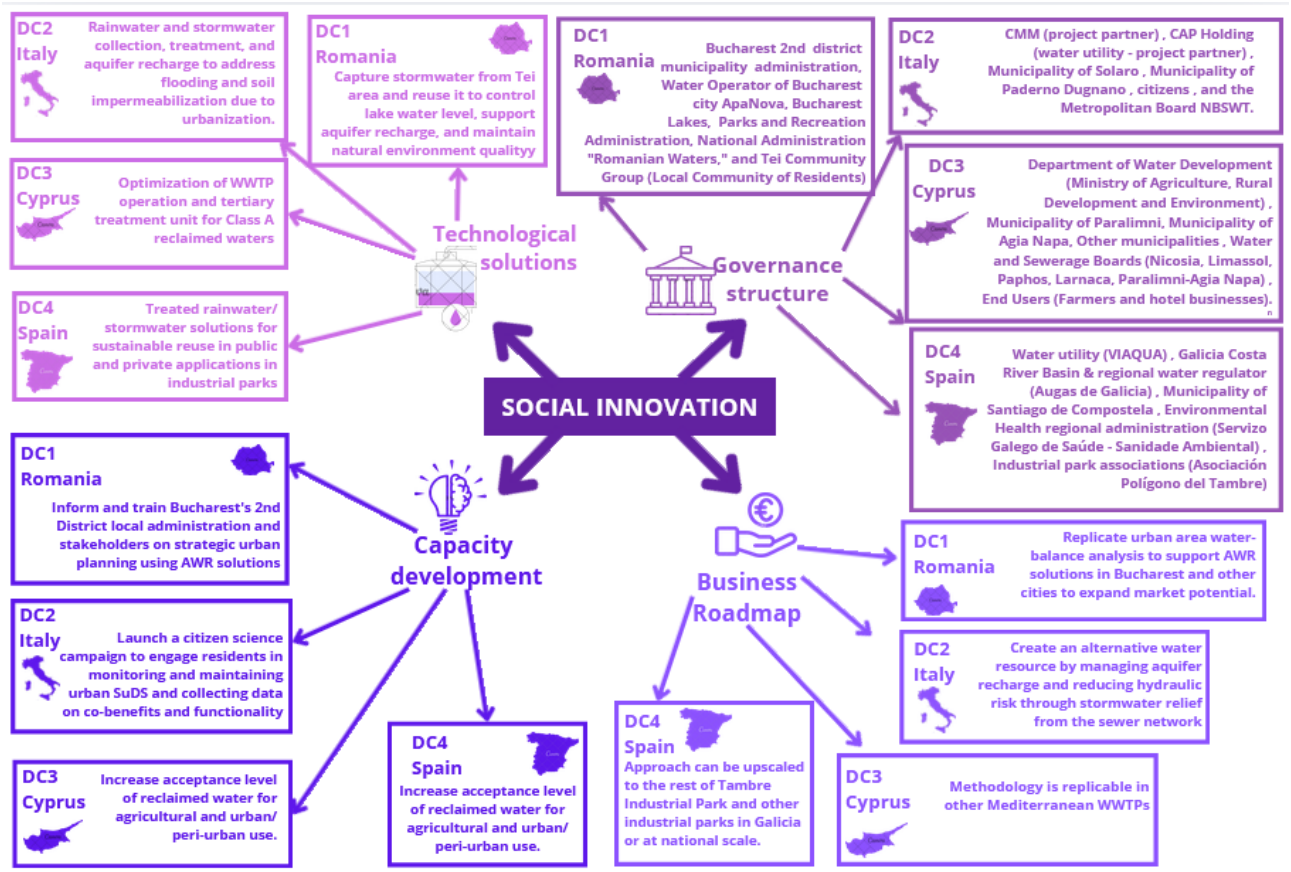


Figure 2: Social Innovation

III.3 Page 2: Technological solutions

AWARD is committed to advancing water resilience and sustainability by strategically integrating a diverse range of Alternative Water Resources (AWRs) into water supply strategic planning across Europe. Our approach focuses on deploying and testing **decentralized, nature-based, and hybrid water technologies,** carefully tailored to address specific contextual challenges and real-world needs within our four demonstration cases

Demonstration Cases and Their Innovative AWR Solutions:

Bucharest, Romania (DC1): Enhancing Urban Water Resilience through Managed Aquifer Recharge: In Bucharest, our focus is on developing an accurate urban water balance for the Tei urban area by applying AWRs solutions that account surface and groundwater flows, as well as stormwater sustainable management through NBS, such as bioretention systems and detention basins and rainwater harvesting and aquifer recharge. The primary benefits include the active recharging of the shallow aquifer, significant relief to the city's sewer network, and the preservation of vital urban natural ecosystems, such notably Circus Park including the lake, thereby enhancing overall urban water resilience and environmental quality. This integrated approach responds directly to the observed decline in groundwater levels and the degradation of local ecosystem

Metropolitan City of Milan, Italy (DC2): Pioneering Sustainable Urban Drainage Systems for Flood and Drought Resilience: The Milan demonstration case is dedicated to the implementation of **Sustainable Urban Drainage Systems (SuDS)** and **aquifer recharge** to enhance both flood and drought resilience. Two key sites,

Solaro and Paderno Dugnano, have been selected for monitoring due to their potential to assess the multiple benefits of SuDS and Nature-based Solutions (NbS), including water quality, water quantity, biodiversity, and amenity. Solaro features six infiltration shafts and a bioretention system (140 m^2) designed to manage stormwater from a parking lot. Paderno Dugnano includes nine tree box filters, a 280 m^2 bioswale, a 30 m^3 dry detention basin, and four infiltration shafts to manage stormwater from a parking lot adjacent to a green urban park.

Paralimni, Cyprus (DC3): Promoting Treated Wastewater Reuse for Sustainable Irrigation: In Cyprus, AWARD demonstrates the **advanced treatment of wastewater** to produce high-quality **reclaimed water** for non-potable uses, primarily irrigation. The comprehensive treatment system comprises **pre-treatment**, **biological treatment via activated sludge**, and **tertiary treatment** with **sand filtration** and **chlorination**. A dedicated **storage tank** with algal risk monitoring ensures the safe delivery of Class A water, suitable for irrigating hotel gardens, agricultural crops, and green urban areas. This solution directly combats climate-induced water scarcity, minimizes algal growth, reduces energy consumption in bioreactors, and significantly increases public acceptance of wastewater reuse.

Santiago de Compostela, Spain (DC4): Decentralized AWRs in Industrial Contexts: The Santiago de Compostela demonstration case showcases the **decentralized AWR infrastructure** designed to treat and reuse rainwater and stormwater in an industrial context. The robust treatment system consists of a **wetland system** (combining a **vertical flow wetland** for organic, nutrients, microplastics and solids removal, followed by a **free water surface pond** for pathogen and hydrocarbons reduction). These **Nature-Based Solutions** (NBS) not only provide a reliable alternative water source in drought-prone areas, reducing pressure on surface and groundwater resources, but also support water reuse for irrigating public green areas and industrial processes. The project aims to enhance acceptance of AWRs by demonstrating the viability of decentralized solutions in real conditions, aligning with regional climate strategies and promoting a crucial shift in water culture within the industrial landscape.

Through these diverse and impactful demonstration cases, AWARD is not only proving the technical feasibility of AWRs but also paving the way for their broader societal acceptance and sustainable integration into strategic water planning across Europe.

III.4 Page 2: Governance Structure

AWARD promotes a participatory governance model that ensures the planning and implementation of Alternative Water Resources (AWRs) are **inclusive, transparent, and adapted to local realities**. This governance model combines **vertical coordination (local to EU) and horizontal collaboration (across sectors and stakeholders)**.

Key components of the governance structure include:

- **Local Water Forums (LWFs)**: these multi-actor spaces are established in each demo case **to facilitate participatory diagnosis, deliberation, and co-creation** of water strategies. Originally developed by the World Water Quality Alliance (WWQA) under the United Nations Environment Programme, LWFs are designed to address both local and global water-related concerns by enhancing stakeholder engagement. Within the AWARD project, LWFs aim to (i) raise awareness about Alternative Water Resources (AWRs) at the community level and (ii) contribute to and disseminate AWR-related solutions to support the renewal of strategic water supply planning. Each LWF brings together DC leaders, local partners, and volunteer stakeholders (ideally English-speaking) to ensure a wide diversity of perspectives.

- **Bucharest Demo Case**: A LWF has been established in District 2 of Bucharest to **foster citizen engagement** and coordinate with water utilities (ApaNova), municipal services, community groups (Tei neighborhood), and national stakeholders (Romanian Waters). This inclusive structure supports the **co-production of knowledge, trust-building, and social legitimacy** of AWR-related decisions. A particular focus is placed on overcomingcitizen **mistrust in public water management**, through a transparent, community-rooted governance model aligned with AWARD's objective.
- **Milan Demo Case**: This case highlights social innovation through the **reconfiguration of urban stormwater systems based on NbS** and **strong municipal collaboration**. LWFs are supported by the **local community**, represented by the two municipalities of Solaro and Paderno Dugnano, fostering dialogue and joint decision-making.
- **Cyprus Demo case:** The Local Water Forum (LWF) in Cyprus was focused on presenting the current state and challenges of water reuse in the region, with special emphasis on the upgraded WWTP of Paralimni–Agia Napa, which produces Class A reclaimed water reused for agricultural irrigation, and public spaces. The event brought together key stakeholders from government agencies (e.g., Water Development Department, EOAA), local authorities, environmental institutes, academic institutions and citizens. Participants exchanged experiences on the practical aspects of reuse, discussed challenges related to acceptance, water shortage in the island, and infrastructure optimisation, and were introduced to the project's digital tools (DST-TSD). Valuable feedback was collected via open discussions, helping to shape the next steps of demo implementation, scenario refinement. The event strengthened the local community of practice and reinforced trust between operators, scientists, and users toward expanding the reuse model nationally.
- **Santiago de Compostela Demo Case**: A LWF was conducted to engage actors from public administration, academia, business, and the water sector. The forum aimed to raise awareness on AWRs and gather local perspectives on sustainable water reuse. Participants contributed to a collaborative visioning exercise that generated proposals for nature-based runoff management (e.G., wetlands, permeable pavements) and identified both opportunities (such as biodiversity and cultural value) and barriers (including social acceptance, funding, and regulation). This initial forum significantly increased the participants' knowledge about AWRs and the water situation in Santiago de Compostela and laid the groundwork for future participatory planning activities within the demo case.

- **Transversal Interest Groups (TIGs)**: these working groups address **cross-cutting topics** such as legal frameworks, NbS, and finance, fostering deeper dives into specific areas relevant across different contexts. One TIG is established in each Demonstration Case (DC), following a common methodology across the four sites. TIGs bring together AWARD DC leaders, local project partners from the four demo cases, and, when possible, local stakeholders speaking English. Their goal is to strengthen both inter-DC collaboration and connections with the broader AWARD work packages.
  - **Bucharest Demo Case**: the Bucharest TIG addressed cross-cutting issues such as regulatory barriers, NbS implementation, and financing needs
  - **Milan Demo Case**: the Milan TIG addresses regulatory barriers and financing frameworks for large-scale SuDS deployment.
  - **Cyprus Demo Case**: the Cyprus TIG explores how social innovation is embedded in the reuse of reclaimed water for irrigating in public spaces and promotion of best agricultural practices. At the same time, the demo case shares the **technical knowledge** implemented in Paralimni–Agia Napa WWTP with advanced **real-time monitoring tools including** sensors enabling detailed tracking of performance and resource efficiency. The process strengthens **collaboration** between the Water Development Department (WDD), municipalities, wastewater utilities, farmers, and the tourism sector.
  - **Santiago de Compostela Demo Case**: The Santiago TIG engages local authorities (Municipality, Augas de Galicia), environmental health agencies, water utilities (VIAQUA), and environmental,

neighbourhood and industrial associations. The case introduces **NbS within the industrial landscape**, supporting not only technical innovation but also a **shift in water culture** through stakeholder collaboration and awareness-raising activities.

- **AWR networks:** the AWR networks aim to extend the project's impact beyond the demo case level. These networks operate across local, national, and international scales, serving as a platform to promote AWARD's outcomes, raise awareness, and engage with a broader audience. The networking activities are coordinated by WP6 and focus on building strategic connections with relevant external initiatives. External collaboration is ongoing with networks such as the International Network of Basin Organizations (INBO), the 3S Water Smart Territories, and the World Water Quality Alliance (WWQA). Moreover, the **AlternativeWaterResources4Water cluster** has been created with the two sister projects MARCLAIMED and RECREATE, to foster EU-level knowledge exchange and visibility between the three projects.

This governance model fosters **mutual trust, reinforces local capacities,** and paves the way for **embedding AWRs into institutional practice**. It relies on **clear responsibilities, local ownership, and inclusive decision-making principles.**

III.5 Page 3: Capacity development

AWARD is committed to targeted capacity-building efforts to ensure the **long-term adoption and use of AWRs**. These efforts integrate **technical knowledge, soft skills, and institutional strengthening**. The comprehensive training program employs a "**360° approach**", as defined in the AWARD Training Plan -D6.7) which refers to a structured and multidimensional method for designing and delivering training activities. It takes into account target groups, learning formats, delivery tools, pedagogical goals, and communication channels, to ensure relevance and adaptability across contexts. This approach aims to engage stakeholders from local technicians to regional planners, and to promote **ownership, resilience, and systemic learning** from local pilots (Tier 1 Demo Cases) to a European knowledge network (Tier 2 Local Water Forum and Tier 3 Award networks and AWR4Climate cluster). Key activities include **stakeholder workshops and multi-actor training sessions** tailored to local and thematic needs, offering e-learning modules accessible via the DST-TSD platform and site visits across the four demonstration cases. To facilitate understanding and sustainability of the innovations, AWARD is developing user **guides and learning materials**, including an E-Book, factsheets, and instructional videos, in addition to training modules on the Decision Support Tool for Territorial Sustainable Development (DST-TSD), AWR technologies, governance, and finance. **Awareness campaigns for citizens and SMEs** utilize educational materials to foster social acceptance and user engagement. Furthermore, strategic support is provided to **policymakers and planners** through capacity mapping and needs assessment, aiming to **integrate AWRs into existing frameworks**. This overall strategy aims to provide stakeholders with the **knowledge, skills, and tools they may need to adopt and sustain the innovation**.

Illustrating Capacity Development through Demo Cases:

The demonstration cases serve as practical examples of how capacity development is implemented to ensure the technical feasibility and societal acceptance of AWRs.

Bucharest Demo Case (DC1): This case integrates targeted capacity-building activities aimed at long-term adoption and operationalization of AWRs. Actions include **stakeholder workshops** with District 2 officials, ApaNova, local community groups, and NGOs focusing on accurate Nature-Based Solutions (NBS) implementation and diminishing stormwater volumes from the sewer network. Field visits to demonstration areas (Circus Park, including the lake) showcase functioning AWR systems. Additionally, **citizen awareness campaigns** are conducted to promote understanding and acceptance of rainwater reuse and stormwater removal. Support is also extended to urban planners and decision-makers to integrate AWR solutions into

development and climate adaptation plans. The Circus Lake case specifically plays a key role in capacity development strategy**,** addressing technical, institutional, and soft skill needs across different stakeholder groups.

Milan Demo Case (DC2): Capacity-building in Milan focuses on **institutional empowerment and technical training** for the design, operation, and maintenance of SuDS and aquifer recharge systems. Activities include **training workshops for municipal staff** in Solaro, Paderno Dugnano, and other municipalities across the metropolitan, aimed at providing multi-level tailored new knowledge to involve them in planning and realizing new AWRs solutions. Development of **user guides and toolkits** on SuDS technologies and DST-TSD functionalities is also a key part, including interactive sessions and capacity building. **Public awareness campaigns and citizen science initiatives** are implemented to monitor and maintain SuDS infrastructures. Policymakers are engaged to integrate AWR strategies into **climate resilience and urban development plans**. These efforts contribute to the broader AWARD capacity framework, reinforcing **cross-municipality knowledge sharing** and systemic learning.

Cyprus Demo Case (DC3): Capacity-building efforts in Cyprus focus on **operational optimisation of the wastewater treatment plant**, especially the tertiary unit, with **training of utility operators** to reduce energy use in bioreactors, identified as a key energy hotspot. **Water quality monitoring** for various parameters (BOD_5, COD, suspended solids, nutrients, E. coli, turbidity, and chlorophyll-A) supports high-quality water production. **Awareness and acceptance-building activities** are conducted among farmers, hotel operators to increase their knowledge on AWRs and acceptance, and among municipalities regarding good practices and the safe use of treated wastewater. These actions enhance **technical know-how**, **operational efficiency**, and the **social legitimacy** of reclaimed water for urban and peri-urban use.

Santiago de Compostela Demo Case (DC4): Capacity-building of Santiago de Compostela activities focus on t**raining stakeholders**, including the Industrial Park Association and Neighbors' Associations, in the use and maintenance of NBS-based stormwater treatment systems. **Monitoring water quality parameters** (e.g., organic matter, turbidity, nutrients, pathogens) ensures compliance with water reuse regulations. **Raising awareness** among public institutions, private sectors and citizenship on the benefits and operational aspects of AWRs is also a priority, along with providing support to **decision-makers** in integrating AWRs into **climate adaptation** and **urban planning** frameworks. By empowering local actors, this demo case brings AWARD's 360° vision to life, offering a hands-on model for decentralised and low-impact stormwater reuse.

III.6 Page 3: Business roadmap

The business roadmap will highlight the potential market up-take, social and policy purpose of AWARD solutions while demonstrating their inputs to policy, further research and education. At that stage of the project, the first step in the development of the business roadmap has been developed: The AWARD Value proposition. By highlighting the fits between AWARD results and end-users' expectations, difficulties and objectives, the value proposition provides a first insight into the key elements of the business approach. The second and third steps namely 2) the development of a Business Canvas and 3) the design of the Exploitation plan will be further developed during the course of the project. Through its business roadmap, AWARD opens the way to scaling up its solutions and fostering their long-term uptake.

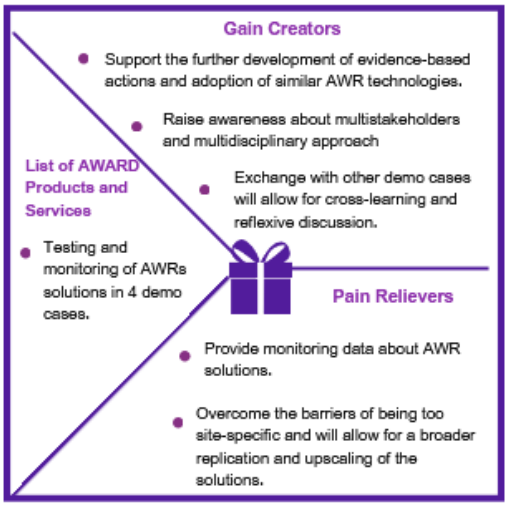


Figure 3: Value Proposition Map of Result 7 "Testing and monitoring of AWRs solutions in 4 demo cases"

The Key Expected results identified in the Value proposition directly linked with the implementation of the AWRs solution is the **"Result 7: Testing and monitoring of AWRs solutions in 4 demo cases"**. The Value Proposition Map illustrated in the Figure 4 above details how the products and service linked with the result **"Testing and monitoring of AWRs solutions in 4 demo cases"** delivers benefits and alleviates the challenges faced by the stakeholders of the demo case communities. As demo case studies involve a wide range of stakeholders and target different audiences, they are designed to gather stakeholders from all categories (water managers, SMEs, associations and researchers), thereby **improving their interactions and mutual understanding of AWR and its related challenges**.

The **Gain Creators of the testing of AWR solutions** include supporting the further development of evidence-based actions and adoption of similar AWR technologies, raising awareness about multi-stakeholders and multidisciplinary approaches, and facilitating cross-learning and reflexive discussion through exchange with other demo cases. The **Pain Relievers** provided are the provision of monitoring data about AWR solutions, and the overcoming of barriers related to being too site-specific, which enables broader replication and upscaling of the solution.

III.7 Page 4: Further reading

References for the Description

[a] Award project website: **https://www.awardproject.eu/about-us-0**

References for the technological dimension

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References for the business Roadmap

[a] Amorsi N., Sonia Siauve S., Wehn U. (2017), AfriAlliance social innovation factsheet on monitoring drinking water quality for improved health in Africa, AfriAlliance, 4p., **https://afrialliance.org/knowledge-hub/afrialliance-social-innovation-factsheets/social-innovation-factsheet-11-monitoring.**

[b] Fragnière, N.,Shamekh, M. (2025): Value Proposition, Deliverable D6.9, Public, EU Horizon AWARD Project

General references

[a] Social Innovation guidance: European Commission (2013), DG GROW. **https://ec.europa.eu/regional_policy/sources/brochure/social_innovation/social_innovation_2013.pdf**

[b] Relevant EU initiatives: ICT4Water, EU Booster, NWRM Platform, WOCAT

III.8 Page 4: AWARD presentation

AWARD is a 36-month Horizon Europe project coordinated by OiEau, bringing together 16 partners from 7 countries. Its objective is to strengthen water resilience and sustainability by mainstreaming Alternative Water Resources into planning and policy processes. AWARD combines demonstration, digital tools, capacity building and stakeholder engagement to deliver systemic impacts. The project's legacy will include tested AWR technologies, transferable governance models, and integrated knowledge tools to guide the future of strategic water supply planning in Europe.

IV. Conclusion

Deliverable 6.4 presents the first Social Innovation Factsheet provided by AWARD. A specifically designed 4-page document will be produced from it for the communication and promotion of AWARD's results.

Social innovation plays a central role in unlocking the potential of Alternative Water Resources to enhance climate resilience and water security. AWARD's integrated approach aims to demonstrate how technology, governance, capacity development, and business viability can be jointly mobilised to address complex water challenges. AWARD bridges science and practice, translating technical expertise into inclusive and lasting change. While promising dynamics are already visible, some limitations and open questions remain, including issues of long-term uptake, policy coherence, and stakeholder engagement. This first factsheet, part of a series of 3 factsheets, sets the foundation for further thematic insights and iterative learning to be developed throughout the project, supporting replication, adaptation and policy alignment across Europe. The topics of the next two factsheets will be chosen in the life of the project in order to address these open challenges and deepen the understanding of key enablers for successful implementation and scaling of Alternative Water Resources solutions.

V. Annex

FURTHER READING

REFERENCES

References for the description

[a] Award project website: https://www.awardproject.eu/about-us-0

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[a] Demo case of award project: https://www.awardproject.eu/demo-cases

References for the governance structure

[a] OECD (2011), Water Governance in OECD Countries: A Multi-level Approach, OECD Studies on Water, OECD Publishing; http://dx.doi.org/10.1787/9789264119284-en.

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[a] UNDP (2009), Supporting capacity development—The UNDP approach, New York, p.4. https://www.undp.org/sites/g/files/zskgke326/files/publications/CDG_Brochure_2009.pdf

References for the business roadmap

[a] Amorsi N., Sonia Siauve S., Wehn U. (2017), AfriAlliance social innovation factsheet on monitoring drinking water quality for improved health in Africa, AfriAlliance, 4p., https://afrialliance.org/knowledge-hub/afrialliance-social-innovation-factsheets/social-innovation-factsheet-11-monitoring.

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[a] Social Innovation guidance: European Commission, DG GROW. https://ec.europa.eu/regional_policy/sources/brochure/social_innovation/social_innovation_2013.pdf

[b] Relevant EU initiatives : ICT4Water, EU Booster, NWRM Platform, WOCAT

[c] Kirakozian, A., Shamekh, M., Fragnière, N. (2025) : Social innovation Factsheet #1, Deliverable D6.4, Public, EU Horizon AWARD Project

List of acronyms

- **AWR**: Alternative Water Resources
- **DC** : Demo Case
- **DST-TSD** : Deliberation Support Tool for Territorial Sustainable Development
- **INBO :** International Network of Basin Organizations
- **LWF** : Local Water Forum
- **NBS** : Nature-Based Solutions
- **SUDs** : Sustainable Urban Drainage Systems
- **TIG** : Transversal Interest Groups
- **WWQA:** World Water Quality Alliance

PRESENTATION OF

ABOUT AWARD

AWARD is a 36-month Horizon Europe project coordinated by the International Office for Water. Bringing together 16 partners from 7 countries. Its objective is to strengthen water resilience and sustainability by mainstreaming Alternative Water Resources into planning and policy processes.

AWARD ACTIVITIES

AWARD combines demonstration, digital tools, capacity building and stakeholder engagement to deliver systemic impacts. The project's legacy will include tested AWR technologies, transferable governance models, and integrated knowledge tools to guide the future of strategic water supply planning in Europe.

REALISATION

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CONSORTIUM

AWARD has received funding from the European Union's under Horizon Europe programme. Grant agreement n° 101136987

Funded by the European Union

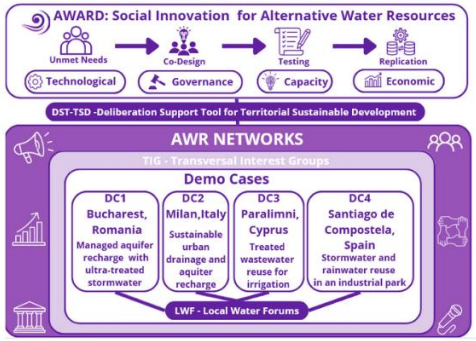
AWARD
Alternative Water Resources and Deliberation processes to renew water supply strategic planning

Testing and monitoring of Alternative Water Resources solutions

DESCRIPTION

AWARD responds to urgent water-related challenges across Europe, such as increasing water scarcity, the need for climate change adaptation, and the evolving regulatory environment, by promoting the integration of Alternative Water Resources (AWRs) into water supply strategic planning. These AWRs include rainwater harvesting, stormwater reuse, treated wastewater reuse, and managed aquifer recharge. The project aligns with key European strategies including the Water Framework Directive (2000/60/EC) and the Water Reuse Regulation (EU 2020/741), as well as the objectives of the Green Deal and the Climate Adaptation Strategy.

AWARD mobilises four demonstration cases across Europe: Romania, Italy, Cyprus, and Spain. Each testing AWRs in real-world contexts to address local vulnerabilities, water stress, and institutional needs. In addition, AWARD develops a digital Deliberation Support Tool for Territorial Sustainable Development (DST-TSD) to support multi-stakeholder co-decision-making. It provides a harmonised platform for co-evaluating technical, environmental, social, and economic dimensions of AWR scenarios. This factsheet presents the social innovation approach in AWARD, highlighting how social, technological, governance and economic dimensions interact to support systemic, inclusive and sustainable change.



FOCUS ON ALTERNATIVE WATER SOLUTIONS

AWARD technical approach focuses on deploying and testing decentralized, nature-based, and hybrid water technologies, carefully tailored to address specific contextual challenges and real-world needs within our four demonstration cases (DC). Examples include developing an accurate urban water balance taking account surface and groundwater flows, stormwater sustainable management through NBs, treatment of wastewater to produce high-quality reclaimed water for non-potable uses, rainwater harvesting and aquifer recharge.

Groundwater monitoring in Bucharest

Wetland treatment unit in Santiago de Compostela

Social Innovation Factsheet # 1

SOCIAL INNOVATION

Social innovation goes beyond technology uptake, it's a lever for systemic change. Aligned with the European Commission's definition, it involves new ways to meet social needs through collaboration and co-design. AWARD applies this via shared governance, stakeholder-led design, and support for viable business models.

The process unfolds in four phases: identifying local needs, co-designing solutions, real-world testing, and scaling up. Key tools include Local Water Forums (trust-building and co-production), Transversal Interest Groups (legal, financial, environmental focus), and a Deliberation Support Tool (evidence-based planning).

Examples of Social Innovation in Water Management

Citizen Participation & Collaborative Governance:

- Circus Lake (Bucharest): LWF builds trust and addresses groundwater depletion through stakeholder engagement.

Nature-Based Solutions (NBS) & Urban Co-design:

- Milan : Stormwater systems redesigned with NBS via municipal and citizen collaboration.
- Santiago de Compostela: Rainwater reuse in industry with NBS and local stakeholder involvement to boost AWR acceptance.

Water Reuse & Cross-Sectoral Collaboration:

- Paralimni–Agia Napa (Cyprus) : Reclaimed water used for agriculture and urban greenspaces through coordinated efforts across public, farming, and tourism sectors.

TECHNOLOGICAL SOLUTIONS

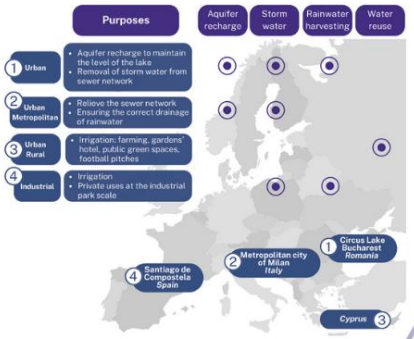
Decentralised, nature-based and digital water solutions tailored to local challenges.

AWARD is committed to advancing water resilience and sustainability by strategically integrating a diverse range of AWRs into water supply strategic planning across Europe. Our approach focuses on deploying and testing **decentralized, nature-based, and hybrid water technologies**, carefully tailored to address specific contextual challenges and real-world needs within our four demonstration cases

- Technology Benefits of Bucharest-Romania (DC1): developing an accurate urban water balance by applying AWR solutions for **shallow aquifer recharge, sewer relief**, and **urban ecosystem preservation** responding to the decline in **groundwater levels and the degradation of local ecosystem.**

1. Technology Benefits of Milan-Italy (DC2) : **Flood and drought resilience through SuDS - reduced flood risk, enhanced aquifer recharge, improved urban biodiversity and water quality.**

- Technology Benefits of Paralimni-Cyprus (DC3) advanced **wastewater treatment** for **reclaimed water** (Class A) for **irrigation**. Combats **water scarcity**, reduces algal growth/energy, boosts public **acceptance** of reuse.
- Technology Benefits of The Santiago de Compostela (DC4). NBS provide **reliable water, reduce pressure on resources**, and support **irrigation/industrial processes**. Aims to enhance AWR acceptance and shift water culture.



CAPACITY DEVELOPMENT

Empowering stakeholders through targeted training, awareness and peer learning.

AWARD is dedicated to **capacity building** for the long-term adoption of **AWRs**, integrating technical knowledge, soft skills, and institutional strengthening. Our **"360° approach"** reaches all stakeholders fostering ownership and systemic learning via **workshops, training , e-learning,** and **site visits.** We develop **user guides** and **learning materials** (AWR tech, governance, finance on DST-TSD) and conduct **awareness campaigns** for citizens/SMEs. Strategic support for **policymakers** ensures AWRs integration into existing frameworks, equipping stakeholders with necessary knowledge, skills, and tools .

Our demo cases practically illustrate capacity development, ensuring **AWR technical feasibility** and **societal acceptance**:

- Bucharest (DC1): Promotes **long-term AWR adoption** via stakeholder **workshops** for officials, utilities, communities, and NGOs. Supports **urban planners** in integrating AWRs into climate plans.
- Milan (DC2): Emphasizes **institutional empowerment** and **technical training** for **SuDS/aquifer recharge** design/operation. Conducts **municipal staff workshops**, develops **user guides/toolkits** (SuDS, DST-TSD), and runs **public awareness/citizen science** initiatives. Engages **policymakers** for AWR integration into climate/urban plans.
- Cyprus (DC3): Focuses on **wastewater treatment plant operational optimization** (tertiary unit), **training operators** to **reduce energy use** and **monitor water quality for high-quality reclaimed water** production. Conducts **awareness campaigns** for farmers, hotel operators, and municipalities on **safe treated water reuse.**
- Santiago de Compostela (DC4): **Trains stakeholders in NbS-based stormwater treatment system** use/maintenance and **monitors water quality** (microplastics, turbidity, nutrients, pathogens). Prioritizes **awareness raising** among **public/private entities** on AWR benefits. Supports **decision-makers** in integrating AWRs into climate/urban planning, showcasing a **decentralized stormwater reuse** model.

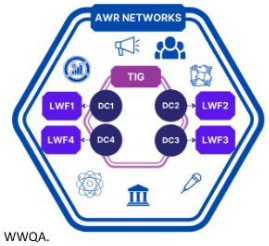
SOCIAL INNOVATION

GOVERNANCE STRUCTURES

Inclusive governance to co-design, deliberate and institutionalise AWR strategies.

AWARD uses a **participatory governance model** for inclusive, transparent, and locally adapted **Alternative Water Resources** (AWRs) planning/implementation. This combines **vertical coordination** (local to EU) and horizontal collaboration (across sectors/stakeholders).

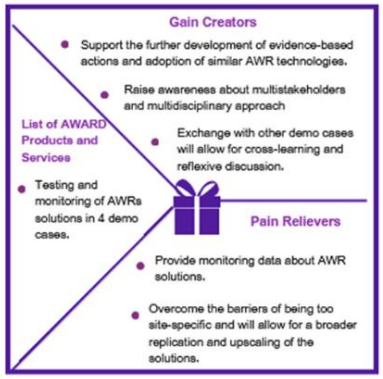
- **Local Water Forums (LWFs):** Multi-actor spaces for participatory diagnosis and strategy co-creation, fostering deliberation and feedback on local water challenges.
  - **Bucharest:** LWF in District 2 engages citizens, water utilities (ApaNova), municipal services, community groups (Tei), and national stakeholders (Romanian Waters) for knowledge co-production, trust, and AWR decision legitimacy. Addresses citizen mistrust.
  - **Milan:** LWFs, supported by the local community, promote dialogue and joint comprehension on NbS for urban stormwater system management and climate change adaptation.
  - **Cyprus :** brought together key stakeholders to discuss the challenges and opportunities of reclaimed water reuse, fostering dialogue on technical performance, policy, and local acceptance.
- **Transversal Interest Groups (TIGs):** these working groups address cross-cutting topics such as legal frameworks, NbS, and finance, fostering deeper dives into specific areas relevant across different contexts. TIGs bring together AWARD DC leaders, local project partners from the four demo cases, and, when possible, local stakeholders speaking English. Their goal is to strengthen both inter-DC collaboration and connections with the broader AWARD work packages.
- **AWR networks :**
  - The third community of AWARD aims at extending impact beyond demo cases.
  - Active at local, national, and international levels to leverage results of the project and raise awareness about AWR-related challenges.
  - Builds strategic connections with external initiatives and networks.
  - Current collaborations: INBO, 3S Water Smart Territories, and a forthcoming link with WWQA.
  - The AWR4Climate clsuter activites with our two sister projects (MARCLAIMED, RECREATE) to foster EU-level knowledge exchange and visibility.



BUSINESS ROADMAP

From demonstration to replication: turning technical results into market-ready solutions

Demo → Value Proposition → Business Model → Policy Integration



AWARD's **business roadmap** aims to foster long-term uptake and scaling of its solutions, highlighting market potential and policy purpose. The initial step is the **AWARD Value Proposition**, which aligns project results with end-users' needs and objectives.

A key expected result is **"Testing and monitoring of AWRs solutions in 4 demo cases"**. The Value Proposition Map details how this provides benefits and addresses challenges for demo case stakeholders, **including water managers, SMEs, associations, and researchers,** improving their understanding of AWRs.

Gain Creators from AWR solution testing include supporting evidence-based actions, raising awareness for multi-stakeholder approaches, and facilitating cross-learning. **Pain Relievers** involve providing monitoring data and overcoming site-specificity, enabling broader replication. The **Business Canvas** and **Exploitation Plan** will be developed later in the project.

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