FURTHER READING

REFERENCES

[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

[d]AWARD project website: https://www.awardproject.eu/about-us-0

[e] Kirakozian, A. (2025) : Value Proposition, AWARD Deliverable D6.9, Public EU Horizon AWARD Project

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LIST OF ACRONYMS

- **AWR**: Alternative Water Resources
- **DC** : Demo Case
- **DST-TSD** : Deliberation Support Tool for Territorial Sustainable Development
- **LWF** : Local Water Forum
- **NBS** : Nature-Based Solutions
- **SUDs** : Sustainable Urban Drainage Systems
- **TIG** : Transversal Interest Groups
- **SMEs** : Small and Medium-sized Enterprises
- **CMM :** Città metropolitana di Milano

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CONSORTIUM

Funded by the European Union

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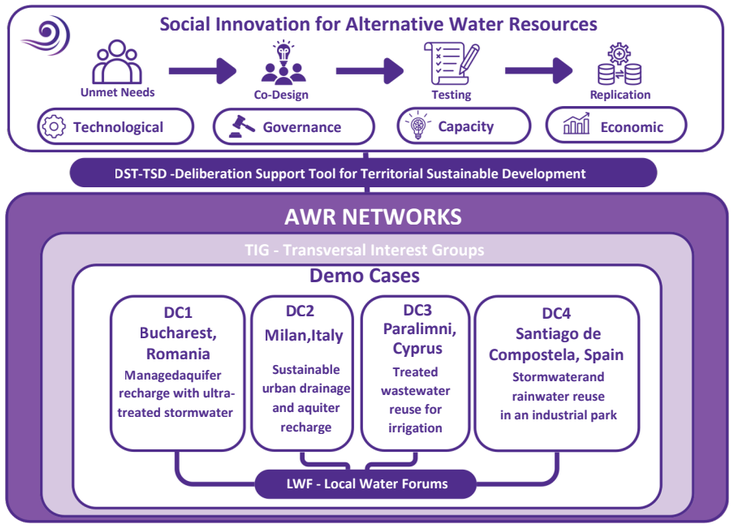
AWARD
Alternative Water Resources and Deliberation processes to renew water supply strategic planning

Empowering Local Stakeholders for AWR Implementation - Milan Demo Case

DESCRIPTION

AWARD mobilises four demonstration cases across Europe: Romania, Italy, Cyprus, and Spain. Each testing AWR 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.



MILAN DEMO CASE

AWARD's **Demo Case 2 (Metropolitan City of Milan, Italy)** targets **stormwater flooding from heavy rains** in one of Europe's most densely populated metropolitan areas by developing AWR supply systems based on **rainwater/stormwater collection and treatment and shallow aquifer recharge**. AWARD monitors impacts on water quantity and quality, alongside co-benefits such as **urban heat mitigation** (amenity) and **biodiversity**, building evidence for wider replication.

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.

Bioretention system,Solaro (DC#2)

Wastewater Treatment Plant, Paralimni (DC#3)

Social Innovation Factsheet # 2

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 AWARD project

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

Lessons from implementation, adaptability, and co-design with local users

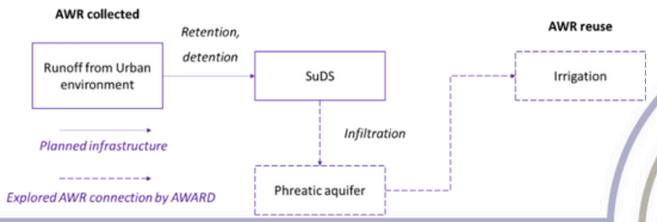
The Metropolitan City of Milan (CMM) is adopting the **"Sponge City"** strategy to address **climate change–related challenges** such as **flooding**, **heatwaves** and, to a lesser extent, **droughts**, through the widespread implementation of **Sustainable Drainage Systems** (SuDS).

This approach increases **infiltration** (and groundwater recharge) and **reduces and delays urban runoff** (decreasing stormwater inflow into the combined sewer network that dilutes municipal wastewater), allows **stormwater treatment** while providing additional co-benefits such as **enhanced biodiversity** and **improved urban amenity.** In SuDS-based interventions, stormwater collected from urban surfaces (e.g., parking lots, roads) is redirected toward drainage systems (largely NBS), including bioretention cells, bioswales, tree pits, dry detention basins, and infiltration shafts, for retention, detention, or infiltration where soil conditions allow.

The monitoring plan proposed by AWARD will further assess the potential of Metropolitan Sponge City of Milan as a **green–blue infrastructure** supporting AWR.

The monitoring approach is based on four pillars:

- **Quantity**: soil-moisture sensors allow estimation of the total rainfall recorded and the proportion of stormwater that is effectively infiltrated by SuDS.
- **Quality**: a network of piezometers located near SuDS interventions is used as sampling points to evaluate the quality of infiltrated water.
- **Biodiversity**: a dedicated methodology based on visual surveys, including insect monitoring via a mobile app, documents observed species and compares them with a theoretical species list to assess ecological performance.
- **Amenity**: low-cost temperature sensors deployed through a citizen science campaign help evaluate the capacity of SuDS sites to mitigate urban heat island effects by monitoring temperature fluctuations and heatwave impacts.



CAPACITY DEVELOPMENT

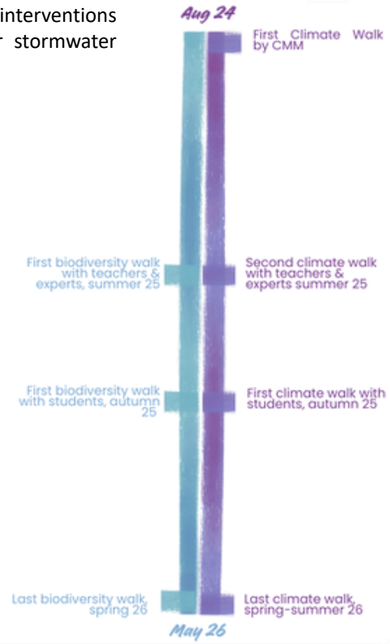
Citizen science activities, awareness raising, and participatory learning

CMM implemented a set of **Citizen Science activities** designed to actively involve middle school students from the Solaro and Paderno Dugnano pilots in **environmental monitoring and awareness-raising**. These observation exercises brought students directly to the core of the two interventions showcased in the demo case, helping them understand how the **use of NBS** for stormwater management can influence **both microclimatic conditions and local biodiversity.**

The first activity focused on observing the **Urban Heat Island (UHI)** phenomenon. Students conducted field measurements in different parts of their municipalities, using infrared thermometers ("temperature guns") to record surface temperatures of pavements, vegetation, and built structures. These observations were complemented by data collected through a group MeteoTracker device managed by project experts. The **MeteoTracker** allowed students to compare their surface measurements with additional real-time atmospheric parameters, such as air temperature, humidity, and pressure, providing a more comprehensive picture of microclimatic variability across urban and peri-urban environments.

The second activity was dedicated to the **observation and appreciation of biodiversity**. Guided by a specialized environmental association, students explored selected urban and para-urban green areas to identify and document local fauna. Using a custom-developed **web application**, they photographed species encountered along the way and catalogued their observations in a shared digital repository.

Together, these activities strengthened students' scientific curiosity, digital skills, and environmental literacy, demonstrating how citizen-driven data collection can support more informed and inclusive approaches to urban sustainability.



SOCIAL INNOVATION

GOVERNANCE STRUCTURES

How local governance mechanisms and multi-actor collaborations foster coordination, ownership, and trust in AWR management

Local governance mechanisms and multi-actor collaborations - such as the **Local Water Fora in the Danube Region and AWARD Transversal Interest Groups (TIGs**) - play an important role in creating **ownership and trust** in the management of **AWR**. Because of **limited understanding of AWR**, there is a reluctance in the public about fully accepting AWR as a solution to growing water availability problems. Public suspicion however, stems from **limited understanding, perceived health risks,** and sometimes low confidence in public institutions. Here, local governance mechanisms and multi-actor collaborations help create the **social and institutional conditions** needed for better AWR acceptance.

First, those platforms bring together a multitude of stakeholders - **municipalities, utilities, regulators, agriculture, industries, and community groups** - and create a moderated space for **dialogue and joint decision-making.** By making **planning and prioritization decisions transparent**, such platforms can reduce the sense that AWR projects are imposed. Furthermore, they help translate general water strategies into **concrete, understandable actions**, and because they include a mix of local experts, utility staff, and user representatives, they improve the **legitimacy** of both the process and the outcomes.

Second, such platforms as a form of participatory governance can strengthen **ownership**. When users engage in planning the process and influencing the outcomes - **by designing monitoring protocols, choosing end-use applications and evaluating risks and benefits** - they gain a share in the project´s success.

Third, such processes help to (re-)build **trust** - AWR projects often require **long-term investments**, but also **behavioral change**, and when institutions **communicate clearly** and **share all information about the project,** trust can grow. Local governance mechanisms and multi-actor collaborations are ideal for this because they enable continuous interaction rather than one-off consultations. Over time, relationships formed between participants in such platforms can **normalize AWR** as a reliable solution to water scarcity, reducing suspicion to AWR and thus strengthening local water management.

BUSINESS ROADMAP & SUSTAINABILITY

Building a Scalable Roadmap for AWR Integration

The transition from **awareness to action requires** not only local engagement and technological adoption, but also a **clear roadmap for long-term integration**. In AWARD, the testing and monitoring of **AWR solutions** in the **four demonstration cases** provide the foundation for this transition. By generating **real-world performance data,** documenting operational conditions, and capturing **stakeholder feedback**, these demonstrations **reduce uncertainty for future adopters** and form a **robust evidence base for scaling**.

These activities deliver **immediate benefits** to **local authorities, utilities, SMEs and community actors**. They improve understanding of how AWR solutions perform in different contexts, increase confidence thanks to transparent monitoring, and strengthen collaboration across sectors through shared analysis of the results. They also help clarify the **operational, financial and governance conditions** that territories need to anticipate when planning the adoption of AWR options.

From a sustainability perspective, the demonstrations reveal three conditions that are crucial for long-term uptake:

1. **Economic feasibility**, supported by clearer expectations regarding costs, benefits and potential funding opportunities.
2. **Institutional anchoring**, strengthened through local coordination mechanisms such as dialogue platforms and multi-actor forums that create stable spaces for joint decision-making.
3. **Social durability**, enabled by awareness campaigns, citizen engagement and open access to monitoring results, which together help build public trust.

By linking technical evidence with **governance, capacity building and financial considerations**, AWARD creates a pathway for territories to move from awareness to decisive action and lays the groundwork for future exploitation and replication of AWR solutions.