BOOST-IN

Uptake of innovative and circular solutions for water

POLICY BRIEF

December 2025

Overcoming social perception barriers in circular water solutions

Funded by the European Union

BOOST-IN

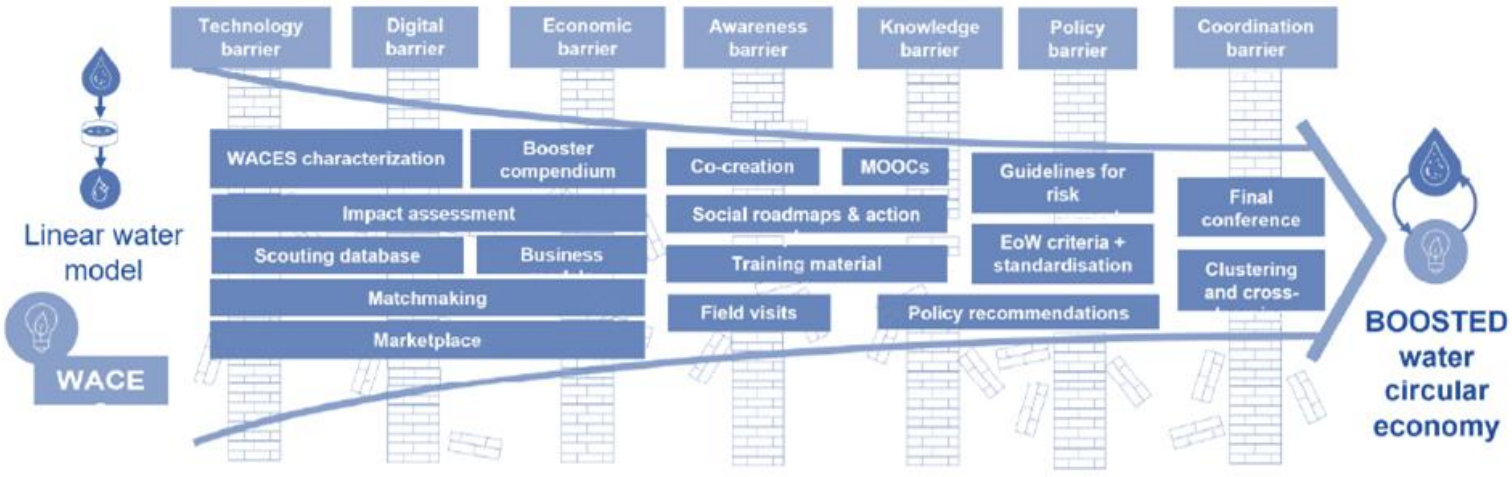
is an EU-funded project dedicated to implementing a successful strategy to promote technological changes, governance schemes, shifts in mindset and organizational structures the water sector needs to become circular. The project will help the transition from a wasteful, linear way of handling water to a circular economy. This means seeing water not just as something to use and discard, but as a precious resource that can be reused, recycled, and valued in many ways, from powering our homes to growing our food. Through a multi-actor co-creation approach, BOOST-IN is being implemented in six Regions of Opportunity across Europe, where social perception, governance readiness, and regional policy frameworks are tested to support innovation uptake.

Main Preliminary take-aways

- EU policy instruments must include social readiness criteria in funding, implementation, and impact assessments.
- Regions need support to establish or joint inclusive platforms for experimentation and trust-building aligned with the topics that they want to address.
- Behavioural, emotional, and cultural aspects of water reuse must be considered alongside technical feasibility.
- Citizen participation should begin before technology deployment, starting from shared problem framing.

BOOST-IN shows that technical innovation alone is insufficient without societal embedding. By integrating behavioural insights, participatory foresight, and region-specific co-creation, BOOST-IN builds a new model for just and inclusive circular water transitions. This brief presents the key lessons from WP2, which explored social perception barriers and co-creation practices across Europe[1].

BOOST-IN CONCEPT OVERVIEW



[1] BOOST-IN, Deliverable 2.1, *Method and best-practice recommendations for co creation of strategies to address social perception in the frame of water and circular economy*, December 2024, BOOST-IN-D2.1_Method-co-creation-of-strategies._final.pdf

BOOST-IN's Contribution to a water-smart economy and resilient Europe

BOOST-IN's Water and Circular Economy Solutions are assessed across six policy performance dimensions aligned with EU goals, using the OECD-DAC[2] criteria (relevance, coherence, effectiveness, efficiency, impact, sustainability), offering a comprehensive analysis of the barriers.

The project could directly support the implementation or development of several directives and strategies. Considering the current EU political agenda[3], the project activities could particularly contribute to the following directives' implementation or revision that have been identified by the project[4] :

- **The implementation of the Water Resilience Strategy**: This communication of the European Commission will aim at repairing the water cycle, build a water-smart economy as well as provide access to water and sanitation for all.
- **The implementation of the recently revised *water acquis***: namely the Water Framework Directive, the Urban Wastewater Treatment Directive, the Water Reuse Regulation as well as the Drinking Water Directive.
- **The development of the EU Circular Economy Act**: this legislative instrument is expected in 2026 with a public consultation this year.

BOOST-IN potential contribution in the EU policy agenda 2025

EU Legislative Instrument	Status	BOOST-IN Contribution
Water Framework Directive (WFD)	Ongoing implementation	Contributes to water quality improvement, sustainable abstraction, and ecological restoration.
Urban Wastewater Treatment Directive	Revised (2024)	Promotes advanced wastewater reuse and sludge valorisation.
Drinking Water Directive	New standards applied	Ensures safe reclaimed water for non-potable and indirect potable uses.
Water Resilience Strategy	To be published (2025)	Informs governance models and cross-sectoral links (e.g., agriculture, energy).
Circular Economy Act	Contribution. Forthcoming (2026)	Prepares ground for integration of Water and Circular Economy Solutions into Circular Economy indicators and funding.

[2] Organisation for Economic Co-operation and Development – Development Assistance Committee. For more information please look at OECD (2021), *Applying Evaluation Criteria Thoughtfully*, OECD Publishing, Paris, https://doi.org/10.1787/543e84ed-en. Understanding the six criteria: Definitions, elements for analysis
and key challenges, https://www.oecd-ilibrary.org/.

[3] EU Commission Work Programme 2025: Commission work programme 2025 - European Commission

[4] BOOST-IN, *Deliverable 3.1: Assessing the contribution of selected WACES for meeting EU- and National Policy Targets,* March 2025, BOOST-IN-D3.1_Policy-assesment-framework.pdf

Lessons from Workshops: Co-creation for societal Readiness

Flexibility and collaboration are central for stimulating societal readiness. BOOST-IN's WP2 co-creation workshops, implemented between March and August 2025, engaged over 120 stakeholders across four Regions of Opportunity. The process applied a common methodology based on Deliverable 2.1's co-creation framework, focusing on *vision building*, *transition pathways*, and *roadmap definition (cf. Table).*

Across all workshops, consistent trends emerged. Firstly, social trust is a precondition for circular innovation uptake. Secondly, Communication must be continuous, not event-based. Lastly, Education transparency and governance must reinforce each other to sustain acceptance. Therefore:

EU policy instruments must include social readiness criteria in funding, implementation, and impact assessments. This aspect is particularly relevant for achieving the objectives of the *water acquis,* as an estimated €255 billion will be needed (EU-27) by 2030 to meet the Drinking Water and Urban Wastewater Treatment Directives, particularly in infrastructure for water reuse[5]. For example, the recent recast of the UWWTD included a compliance rate to stimulate this approach[6].

Regions need support to join or establish inclusive platforms for experimentation and trust-building in line with the topic that they aim to address. For example, based on the Water-Oriented Living Lab (WoLL) concept, Water4All[7] partnership – a related project of BOOST-IN - looks at involving local stakeholders to achieve the United Nations' Sustainable Development Goals, starting from the definition of the challenge. This type of platform also provides technical and upskilling options for local stakeholders, a key request in the conclusions of the Malaga workshop.

Behavioural, emotional, and cultural aspects of water reuse must be considered alongside technical feasibility. Deployment of water-reuse solutions should avoid as much as possible the "Yuck effect". *Co-creation methodologies* such as BOOST-IN's one can accelerate adoption of innovative water reuse solutions while avoiding this effect.

Yuck Effect

The "Yuck" factor is the instinctive aversion some people feel toward reusing treated wastewate10[9]. In the water community, Cranfield University and KWR conducted surveys involving over 2,500 citizens in the Netherlands, Spain, and the UK to assess public acceptance of wastewater recycling for drinking purposes. The findings revealed that the anticipated "yuck factor"—the instinctive aversion to consuming recycled wastewater—was less pronounced than expected. Specifically, 75% of respondents in the Netherlands, 73% in Spain, and 67% in the UK were in favour of reusing water as drinking water[11].

Citizen participation should begin before technology deployment, starting from shared problem framing. Knowledge gaps and ineffective communication emerged as critical barriers to implementation, requiring adaptation to the different cultural gaps. It demonstrates the benefits of a low-context, explicit communication approach, particularly in culturally diverse contexts where trust and transparency are crucial to acceptance.

[5] This element stressed in the Malaga workshop paired with the required investment to comply with the EU water acquis will need strong societal readiness. Water Europe "Socio-economic study on the value of the EU investing in water", Brussels, 2024, Water-Europe-Socio-Economic-Study-1.pdf

[6] Directive (EU) 2024/3019 of the European Parliament and of the Council of 27 November 2024 concerning urban wastewater treatment (recast) (Text with EEA relevance), article 24. https://eur-lex.europa.eu/eli/dir/2024/3019/oj

[7] https://www.water4all-partnership.eu/pillar-d-demonstration-activities

Main barriers identified and lessons learnt per area

Country	Main Barriers Identified	Lessons Learnt
Spain (Andalusia)	Distrust of reclaimed water use in agriculture; limited consumer confidence	Transparent information and certification schemes increase acceptance
Italy (Emilia-Romagna)	Cultural resistance and low awareness of reuse benefits	Education and early engagement foster long-term behavioural change
Greece (Peloponnese)	Weak regulation and fragmented communication between industry and authorities	Participatory governance builds credibility and compliance
Bulgaria (Srednogorie)	Limited awareness of mining water reuse potential; regulatory gaps	Inter-ministerial coordination and community inclusion improve legitimacy
France (Occitanie Region)	Public resistance to reclaimed water in urban settings and limited cross-sectoral dialogue between municipalities and industry	Demonstrated the value of transparent local governance and joint communication between utilities, citizens, and SMEs
Germany (Baden-Württemberg)	Fragmented responsibilities between Länder and municipal levels; perception that water reuse conflicts with existing high water standards	Showed that coordinated governance frameworks and demonstration projects enhance confidence in reuse without compromising quality

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The quantity and quality of water resources are serious problems in many European areas, mostly being a joined result of climate change and anthropic influences. The BOOST-IN project aims to develop a successful strategy that promotes technological changes, governance schemes, shifts in mind-set and organizational structures to solve these problems through a better management of the water sector and application of the circular economy principles, enabling water reuse and recovery of different materials (e.g. energy, nutrients). However, implementation of these changes still faces several barriers (e.g. technology, economy, knowledge, social perception) that need to be overcome. BOOST-IN will achieve these goals by an effective identification, selection (through a specifically designed dynamic funnel method) and transfer of innovative Water Circular Economy Solutions (WACES) to further close and improve the water cycle.

The project will develop and apply its approach in six Regions of Opportunity evenly distributed across Europe (Spain, Greece, Germany, France, Italy and Bulgaria) by organization of co-creation workshops to increase public awareness and support for WACES implementation, barriers overcoming as well as by the specific risk management plans design.

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