

Water Resilience R&I Call for Evidence

ERRIN Contribution

Introduction

[ERRIN's Blue Economy Working Group](#) brings together regional and local public authorities and their research and innovation (R&I) ecosystems working on marine, maritime and water systems. This represents a very relevant base for place-based input into the Ocean and Water R&I Strategy¹.

Water resilience is the ability of a society, ecosystem or economy to anticipate, prepare for and recover from water-related challenges like droughts and floods. It ensures a reliable balance between water supply and demand, provides safe, affordable water for all and restores aquatic ecosystems. Water resilience also has implications stemming from the water-land nexus. Climate-adapted interventions have a key role in strengthening water resilience, supporting more efficient water use, and better integration between soil and water systems.

Along those lines, the Water Resilience Strategy adopts a source-to-sea logic linking rivers, groundwater, coasts and seas. ERRIN supports this approach and states that local and regional authorities should be named as delivery partners in achieving water resilience, as they manage most of this territorial waterscape continuum in practice (e.g. spatial planning, water utilities, agriculture, civil protection).

Local and regional authorities are also closer to citizens and well placed to understand local conditions, which makes them central to fostering the implementation of place-based innovative solutions, delivering clear added value and contributing to EU Cohesion Policy goals.

General messages

Financing water resilience

Existing funding and policy instruments have not been sufficient to close the persistent gap between research results and implementation at scale. The future Ocean and Waters R&I Strategy should support a continuous innovation and investment pathway, from research and pilot projects through regional implementation programmes to large-scale deployment and long-term impact.

In this line, [ERRIN's 2025 input paper on the European Competitiveness Fund \(ECF\)](#) asks for a coordinated mechanism between ECF, Horizon Europe/Framework Programme 10 and National and Regional Partnership Plans (NRPPs), so promising water-resilience projects are not lost between funding streams. The same paper proposes maintaining strong support for societal transformation,

¹ This input encompasses messages that are also applicable to the Ocean R&I Call for Evidence, in line with the Commission's combined-strategy approach.

policy innovation and experimentation – including the EU Missions; all seen as an integral part of innovation and competitiveness.

On top of that, [ERRIN's response to the Open Public Consultation for the new European climate resilience framework](#) calls for supporting regions and cities in developing bankable adaptation and resilience project pipelines, including through advisory services and structured support to translate adaptation and resilience plans into investment-ready projects, building on the experience of [Pathways2Resilience](#) and [EIB advisory mechanisms](#). Again, the response cites the importance of bridging the implementation gap between planning and delivery by ensuring predictable, multi-annual programming, rather than relying primarily on short-term project calls. In that way, local and regional authorities can move from prepared pipelines to effective implementation, particularly for water resilience measures requiring long investment cycles.

Mission-oriented approach

Beyond monitoring, the EU Ocean and Waters R&I Strategy should build on and continue the mission-oriented policy innovation model that has driven the Missions “Restore our Ocean and Waters” and “Adaptation to Climate Change” so far. Both Missions are working priorities of ERRIN's [Blue Economy](#) and [Climate Adaptation and Resilience](#) Working Groups.

In fact, [ERRIN's paper on the role of the EU Missions in the next EU long-term budget](#) highlights their role in mobilising public and private actors, orienting R&I efforts, and accelerating the development, deployment and scaling of solutions addressing Europe's most pressing societal challenges. It recommends that EU Missions should be supported through a seamless investment journey across FP10 (research and innovation) and the European Competitiveness Fund (deployment/scale-up/market uptake), as well as the National and Regional Partnership Plans (NRPPs). The European Competitiveness Fund is essential to translate Europe's strategic priorities into concrete economic opportunities, strengthening industrial capacity, innovation ecosystems and resilience across European territories.

Projects like [CO-WATERS](#), where ERRIN is a partner, illustrate how this could look in practice. Within CO-WATERS, ERRIN is building and leading the Coalition of cities, regions, islands and ports for Mission Ocean and Waters — bridging the Mission's first (developing and piloting) and second (deployment and upscaling) phases by offering Coalition members tailored services, networking and knowledge exchange, and by co-developing a Mission Label to recognise local progress. By doing so, CO-WATERS translates Mission objectives into concrete regional engagement.

ERRIN plays a similar delivery role in [Pathways2Resilience](#), a flagship project under the Mission on Adaptation to Climate Change. ERRIN leads the activities mobilising regions and communities to engage with the Mission, and the project has already allocated €21 million in sub-grants to help around 100 regions and communities co-design climate resilience strategies, action plans and investment plans through its "Regional Resilience Journey" framework. This shows how the Mission-oriented approach can move from strategy to actual regional investment planning, a model the combined Ocean and Water R&I Strategy could reference as it designs its own investment journey.

Territorial Water R&I Ecosystems

ERRIN calls for strengthened support to territorial R&I ecosystems. A stronger emphasis on connecting territorial R&I ecosystems across Europe is of critical importance. Dedicated long-term investment should be ensured, including a clear framework and portfolio of funding instruments to support ecosystem collaboration across value chains and common challenges.

Fostering a more inclusive R&I ecosystem is also key to closing the innovation gap, encouraging measures that support collaboration between less and more innovative ecosystems to tackle fragmentation and tap into capacities across territorial innovation ecosystems. In this line, further attention should be paid to removing barriers for participation for smaller players such as SMEs and start-ups², as well as knowledge institutions lacking research management capacities across Horizon Europe, including European Partnerships.

[ERRIN has publicly advocated](#) for reinforcing the role of regional and local ecosystems in European Partnerships. In this regard, ERRIN's Blue Economy Working Group actively follows and collaborates with the European Partnerships most relevant to this space: the [Water4All Partnership](#) and the [Sustainable Blue Economy Partnership \(SBEP\)](#). These Partnerships connect regional and local R&I ecosystems around shared water and blue-economy challenges and the Ocean and Water R&I Strategy should explicitly build on them as delivery mechanisms.

Other examples of well-funded territorial R&I ecosystems that should be recognised and reinforced by the Strategy are the new Knowledge and Innovation Community [EIT Water](#) and the [Mission Ocean and Waters Implementation Platform \(MIP Ocean\)](#). EIT Water was explicitly designed to build territorial ecosystem connections across the water, marine and maritime sectors — bringing together regions, industry clusters and networks, and positioning itself as a delivery vehicle for both the Water Resilience Strategy and the European Ocean Pact. Similarly, the MIP Ocean in which ERRIN is a partner, connects regional and local stakeholders to shared tools, knowledge and technical assistance.

Smart specialisation

[ERRIN's Smart Specialisation Working Group paper](#) on recommendations for Smart Specialisation Strategies (S3) shows how it can keep driving innovation-led regional development post-2027 by fostering collaboration within and between regional R&I ecosystems.

The paper highlights S3 as a crucial connector between Cohesion Policy, R&I and other policies — directly relevant to water resilience, which cuts across the water-agriculture-energy-food nexus, with strong implications for industry and health.

S3 can serve as a strategic enabler for Cohesion Policy to take a more innovation-oriented approach, mainstreaming innovation across policy priorities. Blue economy priorities identified through

² This point connects with the financing gap the Ocean R&I Strategy Call for Evidence identifies: an estimated EUR 60–70 billion for blue economy SMEs.

regional S3 strategies should feed directly into the Water and Ocean R&I Strategy's priority-setting, avoiding a purely top-down definition of R&I priorities.

The Water Smart Territories Partnership (co-led by ERRIN's members Aragón, Centre-Val de Loire and Friesland) is an example of S3 Partnership bringing regional authorities, clusters, research organisations and industry together³ around resilient water infrastructure, digitalisation, circular economy and multistakeholder water governance. Both operate on the same bottom-up logic ERRIN's S3 paper backs priorities set by regions themselves, in partnership with industry, research and civil society, rather than defined top-down.

These Partnerships should be explicitly referenced by the Ocean and Water R&I Strategy as existing, regionally-owned structures through which its priorities can be co-designed. The Strategy can also strengthen these Partnerships by clearly linking them to funding through Horizon Europe/Framework Programme 10 and the European Competitiveness Fund.

Blue Skills gap

The Ocean and Water R&I Strategy must pair access to finance to further deploy new water-smart solutions with regional testing infrastructure and an “enabling framework for skills”.

The EU Water Resilience Strategy⁴ recognises that public officials, technicians, education and training providers, businesses and citizens involved in building the water resilience skills base at local and regional level suffer from skills gaps and barriers (including a generation gap⁵) that are hindering knowledge development and implementation in this field.

To address these issues, initiatives such as the [European Water Academy \(EUWA\)](#) should liaise with local and regional authorities and determine what the most pressing gaps are in capacity building in areas such as water resilience, wastewater management, water technology and innovation. In this regard, [Water and Competence Without Borders](#) is an example of a Danish-Swedish cooperation involving different stakeholders (including local authorities responsible for water management) with a view to facilitating cross-border competence provision in the water sector.

As indicated above, further attention should also be paid to removing barriers to participation for smaller players, such as knowledge institutions lacking research management capacities including vocational training schools (VETs) and universities of applied sciences (UAS). Blue economy VETs and UAS are the institutions best-placed to deliver the workforce needed for maritime and water-smart

³ The Marine Sustainable Blue Economy Partnership, co-coordinated by Emilia-Romagna (also a member of ERRIN), has a similar role for the blue economy, structuring interregional cooperation on priorities such as decarbonisation sectors, sustainable fisheries and aquaculture, circular blue economy and coastal resilience.

⁴ European Commission: Directorate-General for Environment, *European water resilience strategy*, Publications Office of the European Union, 2025, <https://data.europa.eu/doi/10.2779/0686902>

⁵ This is directly linked with the “Blue Generational Renewal Strategy” proposed under the [European Ocean Pact](#) to address such gap within the blue economy sector

technologies, and should be explicitly named as delivery partners for the European Water Academy and any other skills actions under the combined Ocean and Water R&I Strategy.

Coordinated governance and cross-border cooperation

ERRIN's response to the Open Public Consultation for the new European climate resilience framework proposes that "integration, not duplication" should be a guiding principle when it comes to water resilience and climate adaptation planning across governance levels and departments.

For instance, at present, many local and regional governments are required to produce separate climate adaptation and water resilience plans, disaster risk reduction strategies and emergency response frameworks. This fragmentation leads to duplication of effort, inefficient use of resources, and, in some cases, even maladaptation where measures in one policy area undermine another initiative. For example, water management and agricultural policies may conflict if not aligned, or emergency planning may overlook long-term adaptation strategies.

Cross-border collaboration is also essential, since many water challenges cannot be tackled without a common action plan across borders. This could be promoted and supported through funding programmes such as Interreg. The region of East Macedonia and Thrace states that "water diplomacy" and joint agreements are crucial given the EU's numerous transboundary rivers. The region proposes that the EU should help establish equitable, comprehensive water-use terms balancing economic activity and environmental needs.

ERRIN calls for planning frameworks to embed multi-level governance by formally recognising regional and local authorities as co-designers and implementers, not just delivery bodies, with coherence ensured across funding instruments and policy areas. Rather than creating new parallel structures, ERRIN recommends that any EU-level coordination tool or platform should connect to and complement existing regional platforms. The Water Resilience Strategy partly reflects this, proposing a permanent interservice group within the Commission and to Structured Water Dialogues with Member States. The Ocean and Water R&I Strategy should build on these mechanisms and ensure local and regional authorities get a formal seat, rather than treating governance coordination as a separate, unaddressed problem.

On top of that, a stronger emphasis on connecting territorial R&I ecosystems across Europe is of critical importance. A dedicated long-term investment should be ensured, including a clear framework and portfolio of funding instruments to support ecosystem collaboration across value chains and common challenges.

Topic-specific input

A. Knowledge, technology and territorial testbeds

Knowledge gaps and technological breakthroughs

Investment is needed in innovative water technologies to safeguard the availability of clean freshwater.

It is necessary to allocate resources to water research and to the collection of territorial data, to address the challenge of "insufficient knowledge of the water cycle." Increasing the knowledge base is key to the overarching objective of restoring the water cycle.

One of Piedmont Region's priority R&I areas is deploying innovative monitoring technologies (satellite observation, remote sensing, drones and real-time telemetry) to track both the quantity and quality of surface water and groundwater. This would enable earlier detection of critical conditions, more effective planning, and stronger evidence-based water governance across administrative levels.

Networks of testing facilities and research infrastructures

Real-world demonstration environments are essential to validate solutions under operational conditions and accelerate replication across Europe. ERRIN supports the development of a European network of testing facilities and research infrastructures for large-scale demonstration of water-smart solutions.

Southwest Finland's Archipelago Sea could become a site for studying, from a source-to-sea logic, how eutrophication mitigation, catchment-to-coast management, coastal ecosystem dynamics and nature-based solutions can support the restoration of eutrophic, semi-enclosed coastal seas. Coastal systems as such should be recognised as a distinct research priority, since their hydrological and ecological characteristics differ from inland waters.

More broadly, Southwest Finland hosts a strong water and maritime R&I ecosystem, positioning it as a European living laboratory for developing, testing and demonstrating integrated water resilience and maritime solutions. Furthermore, lessons learned could support the development and replication of solutions in other European semi-enclosed coastal systems facing similar pressures.

B. Securing water supply through water-smart technologies and circular water management

Water efficiency measures (e.g., AI-driven leak detection of drinking water pipes) and climate-adapted farming (such as precision agriculture or smart irrigation) are also key R&I priorities to ensure a sustainable and efficient management of the water cycle.

Piedmont's second priority R&I area — improving irrigation water management to increase water-use efficiency and ensure sustainable allocation of water resources, including in areas and periods affected by water scarcity — illustrates how diminishing water resources make investment in infrastructure and innovation vital, especially in areas under high tourism pressure or within the Mediterranean basin.

The island of Thasos (East Macedonia and Thrace) illustrates this: a permanent population of 13,000 faces over one million tourists during summer, straining local infrastructure and potable water supply. Efficient funding for desalination projects could help alleviate pressure on islands or areas facing similar seasonal strains.

Circular systems for water reuse and efficiency are another R&I priority. Complying with new legislation on wastewater treatment, cities will need to become circular hubs for nutrients and for recovering phosphate and nitrates. They will also need to invest in more pollution removal (PFAS,

pharmaceuticals, micro-plastics, pesticides). Northern Netherlands, for example, is currently deploying a large-scale circular water system in the Spordok neighbourhood in Leeuwarden.

C. Restoring water quality: eutrophication and pollutant run-off

The source-to-sea approach is the right framing for tackling nutrient run-off and eutrophication, since land-based pollution pressures travel downstream into coastal and marine waters.

Geographically distinct areas, from South Denmark to Murcia, encounter this mutual issue and endorse this holistic management framework.

The Region of Southwest Finland illustrates this logic in practice: diffuse agricultural nutrient loading from its catchment area is the main pressure on the Archipelago Sea (part of the Baltic Sea), one of Finland's most eutrophication-heavy coastal water areas. The Baltic Sea's specific characteristics (shallow, brackish, semi-enclosed with limited water exchange and a large drainage basin) amplify these pressures, and climate change is further altering hydrological cycles and coastal ecosystem risk.

Southwest Finland has demonstrated a range of nature-based and technical measures to reduce agricultural nutrient losses (gypsum application, structure liming, fibre amendments and nutrient recycling). Its experience suggests the main barrier is no longer the availability of solutions, but their large-scale uptake and cost-effective targeting of high-risk areas.

Attention should also go to microplastics, nitrates and phosphorus recovery from wastewater. There is a need for a standardised method to quantify microplastics and effective removal technologies, particularly in water treatment facilities. Over 55% of the EU's surface waters reportedly lack satisfactory chemical quality⁶, mainly due to excessive nitrate concentrations. Unlike phosphates, nitrate levels have not decreased despite longstanding EU directives, pointing to a need for better enforcement alongside new nitrate-removal technologies. Given projected phosphorus scarcity, affordable technologies to recover phosphorus from wastewater are also essential.

D. Nature-based solutions for floods and droughts

ERRIN's Climate Adaptation and Resilience Working Group (Natural Resources and Adaptation Cluster) drives the network's work on the EU Mission on Adaptation to Climate Change, with a strong nature-based solutions focus.

The Working Group's response to the Open Public Consultation for the new European climate resilience framework states that climate resilience opens new markets in areas of relevance to water management, such as regenerative agriculture, resilient infrastructure, climate services, insurance products and nature-based solutions. To unlock this potential, Europe needs a coherent investment pathway that ensures continuity from research and demonstration to territorial piloting, large-scale deployment and market uptake.

⁶ *Chemicals in European surface water and groundwater (Signal) | Indicators and signals | European zero pollution dashboards (EEA)*. (n.d.). Retrieved July 31, 2026 from <https://www.eea.europa.eu/en/european-zero-pollution-dashboards/indicators/chemicals-in-european-surface-water-and-groundwater-bodies>

Climate resilience by design is a cross-cutting principle that should progressively apply across all sectors exposed to climate risks. Thus, given the increasing risk of droughts, floods and water scarcity, resilience by design must integrate basin-level planning, nature-based solutions, and sustainable water use into territorial and infrastructure strategies.

Climate resilience by design requires that spatial planning frameworks systematically allocate sufficient space for water retention, groundwater recharge and green-blue infrastructure. In this context, coherence with the EU Water Resilience Strategy, notably the proposed “Sponge Facility” promoting soil water retention through a source-to-sea approach, as well as with the European Investment Bank’s Water Programme, including its focus on nature-based solutions, would strengthen both policy integration and access to financing.

One key example from the [RESIST](#) project (where ERRIN is a partner) in Southwest Finland: Nature-based solutions in the Savijoki River basin restored hydrological balance and reduced nutrient runoff. Tools such as the *Blue-Green Factor* (integrating green infrastructure into building permits) and the *Raingarden Catalogue* (co-designed with gardening companies) are now transferred to Normandy (France) and East Macedonia and Thrace (Greece). These measures showcase effective mobilisation of citizens and the private sector. The Blue-Green Factor also integrates water management, biodiversity restoration and urban planning, linking resilience, adaptation, nature restoration and municipal regulation into a single instrument.

[ERRIN](#) (European Regions Research and Innovation Network) is a Brussels-based platform that gathers around 130 regional organisations in more than 25 European countries. ERRIN aims to strengthen the regional and local dimension of EU Research and Innovation policy and programmes. ERRIN supports members to enhance their regional and local research and innovation capacities and further develop their research and innovation ecosystems.

Through its member-driven working groups, ERRIN aims to strengthen EU policy developments by promoting the place-based perspective and the regional innovation ecosystems approach. The unique value of ERRIN’s policy work lies in its close collaboration with and between local and regional stakeholders, continuous dialogue with European institutions and the ability to provide concrete input based on diverse experience and expertise developed through over 20 years of activity in Brussels.

For more information on the input, please contact:
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