STARS4Water

SUPPORTING STAKEHOLDERS FOR ADAPTIVE, RESILIENT AND SUSTAINABLE WATER MANAGEMENT

NEWSLETTER
ISSUE NO. 5 – AUGUST 2026

IN THIS ISSUE:

1. EDITORIAL

Dear Reader,

We are pleased to share the 5th STARS4Water Newsletter, designed to keep you updated on our project's progress, outcomes, and other significant developments in the fields of water resource management and climate adaptation. Our goal is to engage a broad audience—spanning the scientific, policy, and business communities—with insights from STARS4Water, inviting your feedback and fostering the growth of a collaborative STARS4Water Community.

STARS4Water is a stakeholder driven EU research project under the Horizon Europe and will develop, in co-creation with stakeholders, the next generation tools and data services to support informed decision-making on actions towards sustainable and climate resilient water resources management. Seven River Basin Hubs are involved in the process, serving as living labs for the co-creation of data services and tools with stakeholder communities and as accelerators for further up-scaling of these services and tools to other river basins worldwide. Our overarching goal is to improve the understanding of climate change impacts on water resources availability and the vulnerabilities for ecosystems, society and the economy at river basin scale, including two distinctive elements: first, the establishment of an international stakeholder community as representatives of the wider river basins' community to address their specific needs and requirements for sound water resources' management and climate adaptation. Second, the development and application of innovative data services, models, tools.

We are in the last year of our project, and we are happy to present our current achievements and outputs (section 2), update you on developments from the water and climate community and upcoming events (section 2), and opportunities to get involved and interact with the STARS4Water team (section 4).

For more information about the project please visit our website **WWW.STARS4WATER.EU** , and feel free to send us specific inquiries using the available **CONTACT FORM**.

2. INSIDE STARS4WATER: UPDATES ON OUR ACTIVITIES

STARS4Water cuts across the scientific themes of water resources management and climate adaptation, and addresses multiple stakeholders concerned with sustainable water resources management. Different products target a range of groups, tailored to their identified needs. During the past months various activities were implemented. Below we present brief summaries of the following STARS4Water activities:

- **STARS4Water Conference is almost here – Join us in Delft or online**
- **Joint Policy Event of the Horizon Europe projects SOS-Water & STARS4Water**
- **STARS4Water presence in the EGU26 General Assembly, Vienna, Austria**
- **STARS4Water assesses future water availability and risks across seven European river basins**
- **Explore the future of Europe's river basins through the new STARS4Water Story Maps**
- **New peer-reviewed Journal Collection showcases STARS4Water research**
- **EU Water Legislation under review: Stakeholders have their say**

▪ STARS4Water Conference is almost here – Join us in Delft or online

On 15–16 September 2026, the STARS4Water community will come together in Delft, the Netherlands, for the **Conference "Developing stakeholder-driven solutions for a water resilient river basin management: Connecting Science to Practice"**. Bringing together river basin authorities, policymakers, researchers and European actors, the event will explore how science, stakeholder knowledge and innovative tools can support the implementation of the EU Water Resilience Strategy and strengthen climate-resilient river basin management. The programme will feature discussions on co-creation, science–policy collaboration, global and local data, climate-risk assessment, the Safe Operating Space concept, and the role of AI/ML in water management. Participation is free of charge, with both in-person and online attendance available.

The conference is just around the corner — Register now and join the conversation on shaping the future of water resilience!

Conference programme, details and registration

▪ Joint Policy Event of the Horizon Europe projects SOS-Water & STARS4Water

On the 22nd of June 2026, the Horizon Europe projects **STARS4Water** and **SOS-Water** successfully hosted the joint policy event *"Navigating Europe's Water Challenges: Building Resilience through Science and Policy"* in Brussels and online. The event brought together policymakers, river basin organisations, researchers, practitioners and other stakeholders to discuss how scientific knowledge and innovation can better support resilient water management across Europe.

The discussions focused on one central question: **How can scientific evidence be translated into effective policy and practical action?** Participants explored the growing challenges facing Europe's freshwater systems, including droughts, floods, water scarcity, ecosystem degradation and competing demands for water resources. The event highlighted the importance of strengthening the science-policy interface to support implementation of the European Water Resilience Strategy and other key EU water policies.

During the event, STARS4Water presented its stakeholder-driven tools, data services and decision-support solutions that have been co-developed with river basin organisations across Europe. These practical innovations demonstrate how Earth Observation, modelling and integrated data services can support adaptive, resilient and sustainable water management at river basin scale. Complementing this work, SOS-Water showcased its Safe Operating Space framework and advanced modelling approaches for identifying sustainable limits for water use under changing climatic and societal conditions.

The panel discussions emphasised several priorities for strengthening Europe's water resilience, including:

- strengthening collaboration between researchers, policymakers and water managers;
- developing practical, user-oriented tools that address real management needs;
- improving communication between science and decision-makers; and
- ensuring that project results, data services and digital tools remain available and continue delivering value beyond the lifetime of individual research projects.

A key outcome of the event is the commitment by the two projects to jointly prepare a **policy brief**, bringing together the recommendations emerging from the discussions to support the implementation of Europe's Water Resilience Strategy and future evidence-based water governance.

You can now watch the full recording of the event and hear directly from the speakers and panellists as they discuss the future of science-based water resilience in Europe.

Watch the recording here **Read the Event full report**

- **STARS4Water presence in the EGU26 General Assembly, Vienna, Austria**

The 2026 European Geosciences Union General Assembly was held in Vienna, Austria from 3-8 May 2026 and provided an important platform for interdisciplinary exchange and science–policy dialogue. STARS4Water partner Maria-Helena Ramos was one of the EGU Programme Committee Co-Chairs.

STARS4Water partners participated and presented their project research activities:

- Engeland, K., Gelati, E., Hegdahl, T. J., Huang, S., and Veie, C. A.: **Climate change impacts on water availability and hydropower production – a case study from Drammen river basin in Norway** , EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-20631, https://doi.org/10.5194/egusphere-egu26-20631, 2026.
- Avila, L., Engeland, K., Jahr, T., and Kollet, S.: **A ConvLSTM surrogate model to predict high-resolution daily snow water equivalent in Norway**, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-8502, https://doi.org/10.5194/egusphere-egu26-8502, 2026.

- Purnamasari, D., Weiland, F. S., Teuling, A., and Weerts, A.: **Quantifying future water demand in the Rhine river basin under climate and socioeconomic change**, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-16143, https://doi.org/10.5194/egusphere-egu26-16143, 2026.

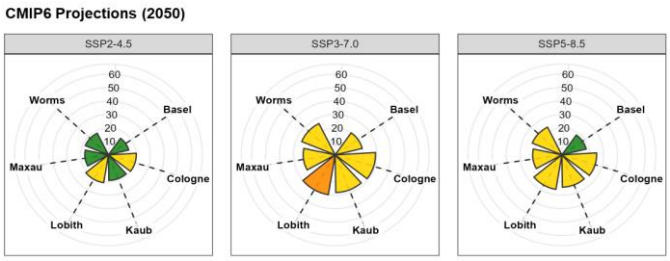
▪ STARS4Water assesses future water availability and risks across seven European river basins

How can river basin managers prepare for a future in which climate change alters water availability while pressures on water resources and management systems continue to evolve?

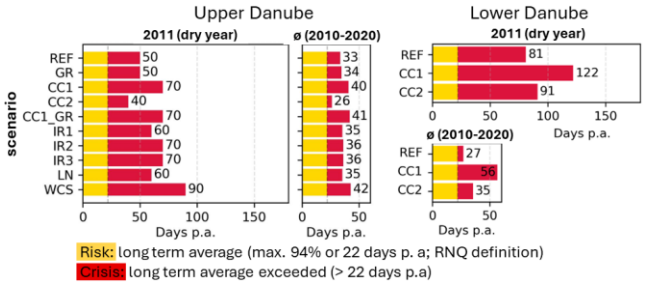
STARS4Water has completed an integrated assessment of **future water resources availability and risks across its seven River Basin Hubs: the Danube, Drammen, Duero, East Anglia, Messara, Rhine and Seine**. The work combines improved climate and hydrological information, modelling tools and locally relevant scenarios to explore how changing conditions could affect water resources and their management across diverse European river basins.

At the heart of the assessment is the **STARS4Water Safe Operating Space (SOS) framework**, developed together with river basin stakeholders. Rather than applying a single definition of what constitutes a "safe" water system, the framework is tailored to the specific challenges, priorities and operational practices of each basin, helping translate complex information on climate change, hydrological variability and uncertainty into information relevant for water management. Across the seven basins, STARS4Water investigated a diverse range of challenges, including **low flows and water allocation in the Danube, hydropower reservoir operations in Drammen, future groundwater resources in the Duero, ecological flows in East Anglia, water stress in Messara, changing river flows in the Rhine, and reservoir operations and low-flow management in the Seine**.

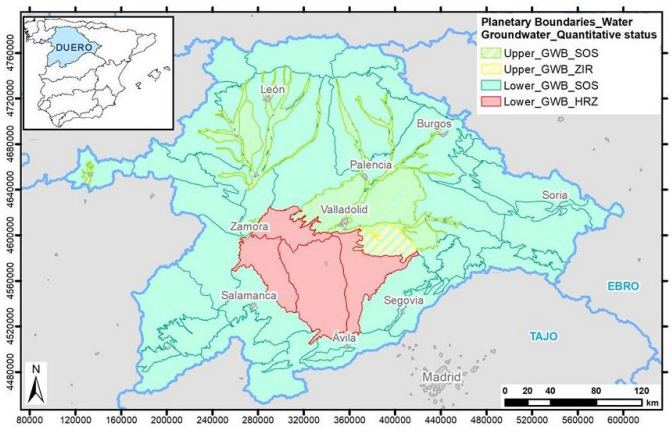
The results show that climate change can intensify socioeconomic and environmental risks and challenge existing water-management practices. Scenario analyses also reveal critical situations around water sharing and tensions among different users, which could become more severe under future conditions. These findings highlight the need to consider not only how the climate and hydrological system may change, but also how water is managed and shared among competing uses. Some example results are demonstrated below:



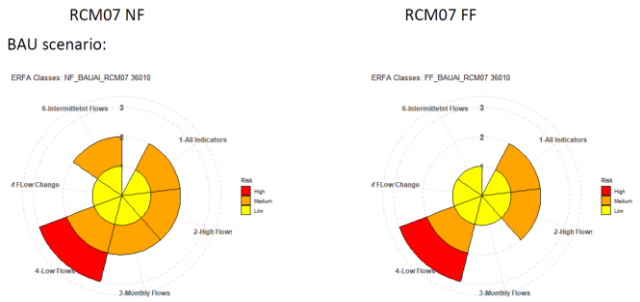
Radial charts showing navigation risk based on the CMIP6 ensemble mean for the selected SSP scenarios for 2050. Each bar represents the average number of days per year during which discharge falls below the GIQ threshold at six Rhine locations: Basel, Cologne, Kaub, Lobith, Maxau, and Worms. Colours indicate navigation risk levels: green = no risk (< 20 days), yellow = low risk (20–25 days), orange = medium risk (25–30 days), and red = high risk (> 30 days).



Safe operating space for navigation in the Danube using the indicator 'number of days per year with discharge at critical stages for navigation'. Left and middle chart shows all considered scenarios and combinations for the Upper Danube. Right column shows the same for the Lower Danube. Results for the average (ø) conditions or for the dry year (2011) are shown.



Map of the groundwater quantitative status in the SOS framework of the Duero River Basin, indicating the risk zones of safe operating space (SOS, in green), increasing risk (ZIR, in yellow), and high risk (ZHR or HZR, in red).



Ecological Risk due to Flow Alteration (EFRA) 'All-Indicators' risk class counts for 13 gauging stations in East Anglia, for the mild (RCM07) and extreme (RCM13) low flow scenarios, the socio-economic scenario Business as Usual (BAU), and the near (NF: 2040-2059) and the far futures (FF: 2060-2079).

A central lesson from the work is the need for an integrated approach to water management that brings together physical factors, socio-economic dimensions and management operations. The involvement of river basin organisations and other stakeholders proved essential for incorporating operational knowledge and management practices into climate-risk assessments and for developing scenarios and indicators that respond to real water-management needs.

The work demonstrates the added value of improved modelling frameworks and data services, as well as the applicability of the Safe Operating Space framework at river-basin scale. Importantly, it also marks a beginning rather than a conclusion: the knowledge, tools and approaches developed through STARS4Water provide a basis for continued dialogue and for supporting the adaptation of water-management practices to future conditions.

The full results are presented in STARS4Water Deliverable 4.2 – *Improved projections on water resources availability and risks in selected river basins*.

More information can be found in the following STARS4Water project Deliverable:
Ramos, M.H. et al. (2026): Improved projections on water resources availability and risks in selected river basins. Deliverable 4.2 (D4.2). Horizon Europe project STARS4Water.

- **Explore the future of Europe's river basins through the new STARS4Water Story Maps**

What will climate change and socio-economic pressures mean for water availability across Europe—and what can be done to adapt? **STARS4Water has launched a suite of interactive Story Maps** that transforms the project's scientific results and model outputs into accessible visual stories for water managers, policymakers, stakeholders and the wider public. Co-created with river basin stakeholders, the Story Maps use maps, visualizations and concise narratives to make complex, scenario-based information easier to explore and understand.

The Story Maps take users across the STARS4Water River Basin Hubs, exploring different but interconnected water-management challenges. They show how **climate change and socio-economic developments can affect low flows, groundwater, water demand, ecosystems, hydropower, navigation and competing water uses**, while also examining possible management and adaptation responses.

Explore the individual stories:

- Danube – **Drought water conditions under climate change:** discover how drier conditions and glacier retreat could affect navigation, ecosystems, hydropower and other water uses, and how targeted management measures could strengthen resilience.
- Drammen – **Balancing future water, energy and ecosystems:** explore how changing runoff and seasonality could reshape hydropower production, ecological conditions and the trade-offs between different water-management objectives.
- Duero – **Groundwater beneath your fields:** see how climate and human pressures are affecting groundwater in this agriculturally important basin and how improved data and modelling can support more adaptive management.
- East Anglia – **Drier future for wildlife, but action can help:** examine the growing pressures on water for wetlands and rivers and the measures that could help protect environmental water requirements.
- Messara – **Basin under water pressure:** explore how groundwater over-abstraction, high irrigation demand and climate change are shaping water scarcity in Crete's largest agricultural plain—and the alternative pathways that could improve its resilience.
- Rhine – **Navigating water scarcity in a changing climate:** explore how climate and socio-economic change could intensify summer water scarcity and trade-offs among domestic, industrial and agricultural water uses.
- Seine – **The future of low-flow management:** discover how climate change and different reservoir-management strategies could influence low flows and water availability along the Seine.
- Meuse – **River Basin in a changing climate:** explore how climate change and socio-economic developments may make low flows more frequent and severe, and how Nature-based Solutions, technical measures and water-demand management can contribute to more sustainable and balanced water availability across the transboundary basin.

Together, the Story Maps demonstrate how next-generation data services, modelling and stakeholder knowledge can be brought together to turn scientific evidence into accessible and actionable insights. By connecting future

water-resource risks with the realities of individual river basins, they aim to support stakeholder dialogue, policy development, public awareness and adaptation planning. The Story Maps are intended to remain a resource beyond the project: the STARS4Water consortium has committed to keeping them accessible and functional for at least five years after the end of STARS4Water.

More information can be found in the following STARS4Water project Deliverable:
Klösch, M. et al. (2026): Web-based story maps on water resources availability in river basin hubs. Deliverable 4.3 (D4.3). Horizon Europe project STARS4Water.

- **New peer-reviewed Journal Collection showcases STARS4Water research**

How can advances in modelling, data and stakeholder engagement be translated into better decisions for resilient water management? **STARS4Water is bringing together key scientific results from the project in a dedicated article collection in the *International Journal of River Basin Management*.** Entitled **"From data to decision: stakeholder-driven approaches for a resilient water future,"** the collection reflects the project's interdisciplinary approach to connecting scientific innovation with the needs of water managers, policymakers and other stakeholders.

Journal's landing page for the special issue: https://www.iahr.org/index/detail/2133

The STARS4Water contributions span a broad range of water-management challenges and methodological advances. They include machine learning and deep-learning approaches for hydrological forecasting, improved process-based modelling, climate-change impacts on water availability and hydropower, groundwater availability and nitrate contamination, ecological and navigation risks, and the application of the Safe Operating Space concept to balance competing water uses. The studies draw on research from several STARS4Water River Basin Hubs—including Drammen, Duero, East Anglia, Rhine and Seine—as well as research with broader applicability. A common thread across the collection is the move from data to actionable knowledge. Several contributions demonstrate how advanced modelling and data-driven approaches can support practical water-management questions, while others explicitly integrate stakeholder knowledge into the development of models and decision-support information. This reflects a central principle of STARS4Water: scientific advances become most valuable for water resilience when they connect with stakeholder priorities, operational realities and decision-making processes.

The collection currently brings together ten manuscripts led by STARS4Water partners, complemented by six contributions from researchers outside the project, demonstrating the wider scientific interest in the themes addressed. In line with STARS4Water's commitment to open science, preprints of the project manuscripts are already openly available through the STARS4Water Zenodo Community, providing access to the submitted

research while the journal publication process continues. Once published, the final papers will also be available open access through the journal.

More information can be found in the following STARS4Water project Deliverable:
Martínez-Santos, P. et. al. (2026): Manuscripts on STARS4Water results for special issue in peer-reviewed journal. Horizon Europe project STARS4Water. Deliverable 6.9 (D6.9). Horizon Europe project STARS4Water.

- **Watch the STARS4Water Documentary: Towards a water-resilient future**

Europe's freshwater systems are facing growing pressures from climate change and human activities, from intensifying droughts and floods to over-abstraction and increasing demands on water resources. How can science, innovative tools and collaboration help us respond? The **STARS4Water Documentary, "STARS4Water project in a nutshell"**, tells the story of how the project is working to support more adaptive, resilient and sustainable water management across Europe.

In just a few minutes, the documentary takes viewers through the STARS4Water approach—from understanding the impacts of climate change on water availability to co-creating new data services, models and tools with the people who manage and depend on our water resources. It visits the project's seven River Basin Hubs—the Rhine, Danube, Drammen, East Anglia, Seine, Duero and Messara—where different water challenges provide real-world settings for developing and testing solutions.

The film also showcases some of the project's key outputs, including interactive dashboards, the STARS4Water metadata portal, future scenario narratives and advanced modelling tools, alongside the stakeholder engagement and capacity-building activities that help translate scientific knowledge into information that can support policy, planning and water-management decisions. Above all, the documentary captures what lies at the heart of STARS4Water: bringing together science, data and stakeholder knowledge to help navigate pathways towards a more water-resilient Europe.

Watch the STARS4Water documentary and discover the project in a nutshell.

More information can be found in the following STARS4Water project Deliverable:
Kossida, M., Lekas N., Laskaridou, S., Manali A., Monokrousou, K. (2025): STARS4Water Documentary. Horizon Europe project STARS4Water. Deliverable 6.7 (D6.7). Horizon Europe project STARS4Water.

3. News from the Water and Climate Community

EU Water Legislation under review: Stakeholders have their say

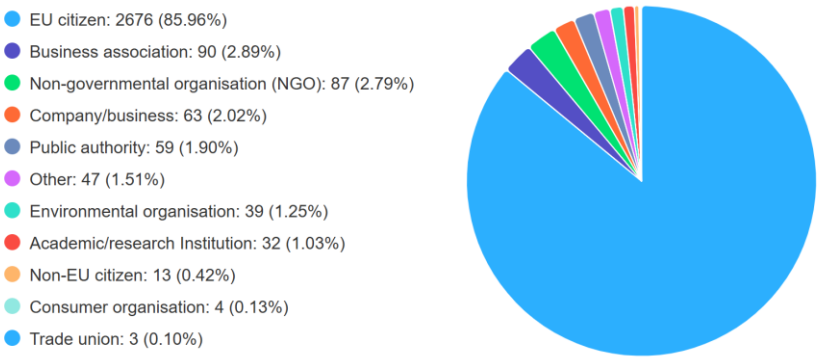
The future of one of Europe's most important pieces of water legislation is under discussion. On **17 March 2026**, the European Commission launched a four-week **Call for Evidence on a targeted revision of the Water Framework Directive (WFD)**, the cornerstone of EU legislation for protecting and improving the status of Europe's surface waters and groundwater. The consultation closed on 14 April 2026 and attracted **more than 3,000 contributions**. The initiative follows the **RESourceEU Action Plan** and focuses particularly on potential regulatory bottlenecks affecting projects for the extraction, processing and recycling of critical raw materials. The Commission aims to examine how implementation of the WFD could be simplified and made more predictable, while promoting circularity and access to critical raw materials and maintaining high standards of protection for human health and the environment. The Commission has also stressed that any targeted revision should continue to contribute to the objectives of the **European Water Resilience Strategy**.

A wide range of stakeholder perspectives

The Call for Evidence generated significant interest from citizens and organisations across Europe. Environmental organisations, water-sector representatives, scientific institutions, industry associations, companies and public authorities were among those contributing to the debate.

Call for evidence on the "Targeted revision of the Water Framework Directive (2000/60/EC)"

Feedback received – statistics by category of respondent



Source: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/17034-EU-water-policy-targeted-revision-of-the-Water-Framework-Directive/feedback_en?p_id=22593

Other stakeholders see scope for a carefully targeted revision. Water Europe, for example, supports a targeted revision while stressing that core environmental standards should be safeguarded and calling for improved permitting, digital and data-driven water governance, and stronger integration of water security into river-basin management.
Contributions have also been published by organisations representing water services, energy, industry, science and professional communities, illustrating the breadth of interests affected by the WFD and the challenge of balancing **water resilience and ecosystem protection with economic competitiveness, strategic autonomy and the needs of water-dependent sectors**.

The feedback submitted through the consultation can be explored directly on the European Commission's portal:
View the Call for Evidence and stakeholder contributions on the Commission's Have Your Say portal
Several stakeholders have also made their detailed submissions publicly available, including European Environmental Bureau (EEB), Water Europe, Living Rivers Europe, EurEau, Eurelectric, ClientEarth, European Federation of Geologists (EFG), Confindustria, Aqua Publica Europea and Fortum, among many others.

What happens next?
The Commission described the Call for Evidence as the **first step** in the targeted revision process. The feedback will contribute to the evidence base for the review and any subsequent legislative proposal, alongside an **impact assessment examining economic, social, environmental and territorial impacts**. The Commission adoption is planned for the third quarter of 2026.
In parallel, the Commission has already taken steps addressing some of the implementation issues behind the review. On 26 May 2026, it published **new Guidance on implementing the WFD** when permitting new projects and existing activities, with particular attention to the mining sector. The guidance aims to reduce uncertainty around procedures and assessment criteria and support more harmonised implementation across Member States. The Commission will continue this work with Member States through the WFD Common Implementation Strategy and **Structured Water Dialogues**.

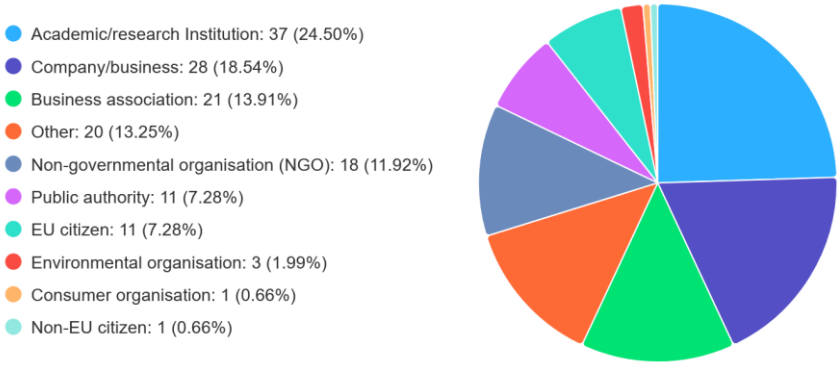
Water resilience moves higher on the EU agenda
The WFD debate is also unfolding within the broader implementation of the **European Water Resilience Strategy**. A significant upcoming milestone is the **launch of the new Water Resilience Stakeholder Platform** on **21 September 2026** in Brussels. The Platform brings together high-level experts from different sectors, Member State representatives and international organisations to advise and support the implementation of the Strategy.
Its first meeting will address the Platform's future work programme, the **Digitalisation Action Plan for the Water Sector**, and **water efficiency**. The Commission will also provide an update on joint guidance for water-efficiency targets. Following the launch, the Platform is expected to meet twice a year, except in years when a Water Resilience Forum takes place. The launch event can also be followed online.

Another important development is the preparation of a dedicated **Water Resilience Research and Innovation (R&I) Strategy**. Importantly, the initiative takes a **source-to-sea approach** and is being developed in parallel with an Ocean R&I Strategy.

The Commission launched a **Call for Evidence for the Water Resilience R&I Strategy** on 15 June 2026, inviting researchers, innovators, industry, policymakers, public authorities, NGOs and citizens to help shape future European priorities for water-related research and innovation. The consultation closed on 2 August 2026, attracting **151 contributions**, while the Commission adoption is planned for the end of 2026.

Call for evidence on the "Water Resilience Research and Innovation (R&I) Strategy"

Feedback received – statistics by category of respondent



Source: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/16276-A-water-resilience-research-and-innovation-RI-strategy/feedback_en?p_id=24638

The future R&I Strategy aims to address key knowledge and innovation gaps, improve coordination of water-related research and innovation, support the scaling-up and deployment of existing solutions, and guide future R&I priorities and investment. Topics raised by the Commission include water management and efficiency, Nature-based Solutions, water-efficient technologies, data sharing and artificial intelligence, research infrastructures and testing sites, and stronger links between research, innovation and implementation. The feedback will also help inform strategic R&I priorities under the next EU programming period.

These developments are particularly relevant to STARS4Water, whose work addresses many of the same challenges: strengthening water resilience at river-basin scale, improving the use of data and modelling in water management, and bringing scientific evidence together with stakeholder knowledge and operational realities. As discussions around the WFD and implementation of the Water Resilience Strategy progress, the experience emerging from research projects, river basin authorities and stakeholder communities can provide valuable evidence for shaping the future of European water management.

4. GET INVOLVED IN THE STARS4WATER COMMUNITY

Subscribe to our Newsletter list

Be the first to know about our latest news and updates, by signing up for our Newsletter. We value your privacy and promise to handle your email with care. As a subscriber, you'll receive exclusive content and helpful resources delivered right to your inbox. Rest assured that we will never sell or abuse your email address.

Contact us

Send us a direct message via our online contact form and we will promptly reply to your request.

- Follow the **LINKEDIN STARS4WATER GROUP** to stay tuned
- For general inquiries, cooperation request, invitation to events, dissemination issues etc., please contact us using the available **CONTACT FORM**
- For data access and download please visit our Metadata Portal: **STARS4WATER METADATA PORTAL**
- For information on upcoming events please visit our **STARS4WATER CALENDAR**
- To download available project deliverables, presentations, publications, please visit the "**OUTPUT**" section of the STARS4Water website and the **STARS4Water Community on ZENODO**

THE PROJECT AT A GLANCE

Title: SUPPORTING STAKEHOLDERS FOR ADAPTIVE, RESILIENT AND SUSTAINABLE WATER MANAGEMENT (STARS4WATER)
Instrument: HORIZON-CL6-2021-CLIMATE-01, EUROPEAN RESEARCH EXECUTIVE AGENCY
Total Cost: 4,584,730 € **EC Contribution:** 4,580,979 €
Duration: 48 MONTHS **Start Date:** October 1st, 2022
Consortium: 21 partners from 10 countries **Project Coordinator:** Stichting Deltares
Project Web Site: www.stars4water.eu ; https://cordis.europa.eu/project/id/101059372

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