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European Commission

CALL FOR EVIDENCE
FOR AN INITIATIVE (without an impact assessment)

TITLE OF THE INITIATIVE	**Water sector – accelerating digitalisation for better management and sustainability**
LEAD DG –RESPONSIBLE UNIT	ENV.C.1 - Sustainable Freshwater Management
LIKELY TYPE OF INITIATIVE	**Communication from the Commission to the European Parliament and the Council**
INDICATIVE TIMING	**Q4-2026**
ADDITIONAL INFORMATION	https://commission.europa.eu/topics/environment/water-resilience-strategy_en

This document is for information purposes only. It does not prejudge the final decision of the Commission on whether this initiative will be pursued or on its final content. All elements of the initiative described by this document, including its timing, are subject to change.

A. Political context, problem definition and subsidiarity check

Political context

This digital action plan for the water sector, which is included in the Commission Work Programme for 2026, is one of the flagship initiatives under the European water resilience strategy. It aims to modernise and standardise water management through advanced digital technologies. It operates at the intersection of the green and digital transitions, directly supporting the objectives of the Competitiveness Compass by helping secure resource availability across multiple sectors.

The plan will build on:

(i) the Apply AI strategy and the AI continent plan, which aim to facilitate the deployment of artificial intelligence for predictive maintenance and real-time monitoring;

(ii) the Data Union strategy, which supports water data sharing by fostering the development of national data portals to overcome fragmentation and make data easy to find, freely accessible, interoperable and reusable, in line with the requirements of the Open Data Directive.

The plan aims to leverage enormous data flows and increased interoperability to drive innovation and efficiency, thereby empowering the EU to lead globally in water innovation and resilience.

Problem the initiative aims to tackle

The main challenge addressed by the digital action plan for the water sector is **the fragmented and inefficient state of digitalisation across Europe's water management systems**. This fragmentation is characterised by a significant lack of coordination both across different stages of the water cycle, such as drinking water supply and wastewater treatment, and between administrative levels, from municipalities to national and EU authorities. Owing to this fragmented digital infrastructure, the water sector has been unable to reap the benefits of the digital transition, struggling to reduce substantial management inefficiencies, lower administrative burdens and strengthen the capacity to effectively monitor and respond to transboundary water risks such as droughts, floods, water scarcity and pollution, while also failing to fully support the implementation of the water-efficiency-first principle. The problem is exacerbated by the lack of harmonised digital standards and guidelines for building an EU digital governance architecture. The absence of a coordinated approach in this area leads to uneven development across Member States, resulting in disparities in water security and service quality.

This problem affects a wide range of stakeholders in the water sector. Public authorities at all levels are struggling to keep pace with technological advancements due to incoherent governance and the complexities involved in updating regulations or launching intricate procurement processes. Water utilities and technology providers incur high costs when replacing legacy systems. Water-intensive sectors such as agriculture, energy and data centres,

despite already generating a significant amount of data, lack the real-time and near real-time data required to optimise usage and efficiency and ultimately build a water-smart economy.

The slow uptake of ICT in the water sector is due to several key factors. The digital transformation of water management, which is largely in the hands of public administrations, is currently being hampered by high initial investment costs that are difficult to recover in full. This is partly due to low tariffs that often do not reflect the true value of water, resulting in a market failure. This initial barrier is difficult to overcome even when the deployment of digital solutions ultimately improves operational efficiency and generates long-term cost savings. In addition, technological fragmentation sometimes prevents devices with older technology from connecting with modern internet of things (IoT) systems, which creates interoperability challenges. Furthermore, the absence of common standards keeps data trapped in proprietary formats, which hinders predictive analysis. Additionally, unresolved issues regarding data governance and ownership continue to create uncertainty. Finally, the water sector struggles to achieve the economies of scale necessary for affordable technology, largely due to its modest size and the lack of coordinated data strategies across Member States. At the same time, many technical staff lack the digital skills required to operate modern tools – a shortcoming that is compounded by persistent connectivity challenges in remote areas.

EU action to enhance digitalisation could help improve efficiency and reduce opportunity costs in the water sector. As climate change intensifies, traditional monitoring methods will become increasingly inadequate for managing extreme weather events such as floods, droughts and water scarcity. Persistent or even worsening fragmentation of digital systems would exacerbate competitive disadvantages for European companies and weaken the EU's position in the growing global water technology market, which is valued at EUR 111.7 billion per year according to Eurostat. Without urgent action, Europe's water management sector risks missing the digitalisation wave, which would result in lost economic potential and reduced resilience against future water crises.

Basis for EU action (legal basis and subsidiarity check)

Legal basis

This is not a legal act.

Practical need for EU action

The EU has the largest number of transboundary river basins in the world. Transboundary challenges such as pollution, droughts and floods have direct cross-border effects that require coordinated digital monitoring and response systems. Digital tools are also useful in local and regional contexts, as effective water management is essential to the EU's competitiveness and people's well-being. Moreover, current technical fragmentation creates barriers to the free movement of water technology services, and uncoordinated digital strategies and procurement processes hinder economies of scale in the internal market. Promoting water data sharing by fostering the development of national data portals to overcome fragmentation will improve interoperability across national systems. This is necessary to bridge national data silos and ensure the flow of critical information needed for local and transboundary water management.

EU action could strengthen cooperation among Member States by facilitating the convergence of technical approaches and data protocols in line with the source-to-sea approach. This would reduce the duplication of R&D efforts and leverage economies of scale, which is essential for a sector comprising 81 500 enterprises, most of which are SMEs. A unified digital market would also strengthen the EU's global competitiveness by building on its leadership in water-related patents, which account for 40% of the global total.

B. What does the initiative aim to achieve and how

The main objective of the digital action plan for the water sector is to accelerate digitalisation across all levels and actors in the water sector in order to address inefficient water management, reduce administrative burdens, build capacity and tackle disparities in digitalisation that limit EU-wide cooperation. As a cross-cutting enabler, digitalisation supports every goal of the water resilience strategy: restoring the water cycle, building a water-smart economy and ensuring clean, affordable water for all.

The action plan aims to address at least the following strategic pillars to modernise the sector and harness the full potential of digitalisation:

- **AI-driven big data analytics** to process large water datasets and improve insight, optimisation and predictive capabilities across water management, from abstraction to wastewater treatment for discharge

or reuse. AI can also help preserve the specialised knowledge of retiring experts. When paired with digital twins (computer models of real-world water systems that use real-time data from sensors), it can ensure this expertise remains available to the remaining workforce. AI-driven monitoring could also help to identify leaks, water quality issues and operational inefficiencies, while promoting more sustainable water management.

- **Large-scale deployment of the internet of things, including smart sensors and meters** to enable more agile water management and increase water efficiency.
- **Routine use of Earth observation** in water management and broader water resilience efforts to reduce the administrative burden, increase spatial and temporal coverage of water monitoring systems, improve cost-efficiency and make data available to a broad array of authorities, businesses and individuals. The plan will align with existing tools of the Copernicus Emergency Management Service, such as the European Drought Observatory and the European Flood Awareness Systems, and new initiatives, such as the Copernicus Water Thematic Hub, Destination Earth and the Digital Twin of the Ocean.
- **Support for a coherent digital framework** for monitoring, planning, maintenance and operation across the water sector, while ensuring robust governance, transparent data practices and strong cybersecurity safeguards in line with the FAIR principle (findable, accessible, interoperable and reusable data). Such infrastructure governance could ensure better implementation and reporting under Article 8 of the Water Framework Directive by building a single source of truth.

EU-level action will focus on interoperability and standardisation – areas where Member States cannot act alone effectively – while implementation specifics will be left to national and local authorities.

This call for evidence identifies key technologies and potential bottlenecks currently shaping the water sector, but the list is not yet exhaustive. The consultation process therefore aims to invite stakeholders to confirm these priorities, highlight any developments that may have been overlooked and provide concrete examples to ensure the action plan is truly fit for purpose.

Likely impacts

The initiative is expected to have a significant positive impact on the economy, society and the environment.

Economic impacts:

- **Cost savings and efficiency:** Smart metering can reduce water use by up to **25%**, with digital systems saving an additional **5-8%** and leak detection reducing consumption by a further **7-14%**.
- **Economic growth:** The plan strengthens the EU's position in the global water technology market, currently worth **€111.7 billion per year** (Eurostat).
- **Competitiveness:** The initiative builds the EU's leadership in **water-related patents**, with the EU holding **40% of the global total**, to boost the competitiveness of the sector's **81 500 enterprises**, mostly SMEs (Eurostat).

Social impacts:

- **Improved services:** Enhanced monitoring ensures greater data transparency for the public and improves water security, in line with the NIS2 Directive on cybersecurity, which safeguards critical infrastructure, including water systems.
- **Job creation:** The sector currently supports **1.6 million jobs**, and digitalisation is expected to create new high-skilled job opportunities (Eurostat).

Environmental impacts:

- **Water resource management:** Efficient real-time data collection and modelling improves the monitoring of water quality, floods, droughts and water scarcity. It enables early alert warnings, directly supports the restoration of the water cycle and helps improve water efficiency and enhance access to and the provision of clean water. Furthermore, predictive analytics can be used to forecast demand, environmental patterns and system stress.

Simplification:

- **Administrative burden reduction:** A key goal is to **reduce the administrative burden** through automated reporting and by maximising synergies between all existing digital tools used for Earth observation.

Sustainable Development Goals (SDGs): The initiative directly advances **SDG 6 (Clean Water and Sanitation)** by improving efficiency and **SDG 9 (Industry, Innovation and Infrastructure)** by fostering the adoption of digital tools.

Overall, the initiative would reinforce Europe's long-term strategic autonomy, resilience, scientific excellence and water management by creating an enabling environment for the *digital water* ecosystem.

Future monitoring

Progress on implementing the measures proposed under this initiative will be monitored and assessed through the mid-term and final reviews of the European water resilience strategy.

C. Better regulation

Impact assessment

The initiative is a communication containing non-binding actions. Therefore, no impact assessment is planned. Any future initiatives resulting from the communication will be subject to an impact assessment, where applicable.

Consultation strategy

The objective of the call for evidence is to offer stakeholders an opportunity to provide input for the development of the action plan in a collaborative and inclusive manner.

The call therefore aims to collect in-depth evidence, information, data and feedback from stakeholders on the three strategic pillars of the plan, with a particular focus on the EU added value of any potential measures. Planned consultation activities include this call for evidence and targeted events to gather further stakeholder input.

The main stakeholders identified include public authorities (national, regional and local), river basin managers, the water industry (utilities and technology providers), water-intensive economic sectors (agriculture, energy and data centres), IT and digital solution providers, and research and academic institutions. Their input is crucial for addressing governance gaps, market barriers and capacity needs. Consultations will be held throughout 2026 to refine preliminary findings and options. This will include a consultative workshop scheduled for Q2 or Q3, alongside targeted engagement with Member States via the working groups set up under the common implementation strategy for the Water Framework Directive (WFD), including those focused on drinking water and urban wastewater. In addition, the Water Resilience Stakeholder Platform will be formally consulted for expert input.