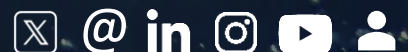

Water Resilience Strategy

A Step towards a Water-Smart Society



Main Recommendations

- 1. Unlock Water-Smart Economy** by creating a Water-Transition Funds in the next MFF to invest in water infrastructure.
- 2. Strengthen EU Industrial Competitiveness with a Water-Smart Industrial Deal** setting a Water-Efficiency first principle, untapping the potential of water reuse, and integrating comprehensive water management strategies into EU industrial policies and sector-specific transition pathways, paired with a thorough enforcement of the EU Taxonomy Regulation.
- 3. Build a Water-Smart Circular Economy Act:** Exploiting the value in water, encouraging reuse of wastewater and water-efficient technologies in water-intensive sectors, fostering water efficient requirement, including with freshwater-intensity labelling while developing innovative business models.
- 4. Develop a Water-Smart Vision for European Agriculture** looking at incentives on quantitative water management such as water reuse, nature-based solutions, water allocation between different sectors, as well as diffuse pollution, exploring water retention policy, and better consideration of water reuse opportunities and nutrient cycle.
- 5. Leverage Digital Water Opportunities** with a EU-wide Action Plan supporting the digitalisation of the water sector, and introduce a Eu-wide water accounting system with an enhanced interoperability of data.
- 6. Secure Biodiversity and Zero Pollution objectives** by ensuring the implementation and enforcement of the zero-pollution legislation and tackling pollution at source and enhancing measures for the better protection of public health and the environment.
- 7. Support disruptive Research & Innovation activities** by developing the next generation of water-smart solutions with the support of a Water-Smart Horizon Europe Programme and the creation of the water-KIC.
- 8. Anticipate Water-related Climate Risks** with ex ante investment and climate mitigation and adaptation plans considering water risks, wildfire, floods and drought management.
- 9. Strengthen inclusive governance** with a permanent interservice group in the EU Commission and encourage the creation of Water-Oriented living Labs, and promote the development of new skills and job profiles within the water sector.
- 10. Achieve the SDGs Agenda** through a water-smart roadmap to clarify the collaboration and financial opportunities, as well as its cooperation with the private sector to ensure access to water and sanitation for all.



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Water Resilience Strategy

A STEP TOWARDS A WATER-SMART SOCIETY

For the first time, water is fully recognised in the EU Commission's portfolio, with a Water Resilience Strategy (WRS) set to tackle water scarcity, pollution, and efficiency while fostering innovation and a circular economy. However, fragmented priorities and limited cross-sectoral collaboration undermine progress. Water scarcity already impacts 38% of the EU population and critical industries, valued at €192 billion, with water demand set to triple by 2030.

Advanced water-smart technologies could save €3 billion annually and create 13,000 jobs, but urgent investment — estimated at least at €255 billion — is needed to ensure compliance with the EU legislation and efficiency. Therefore, a holistic WRS paired with a dedicated Water Fund is vital for Europe's competitiveness, sustainability, and ecological future.



Introduction

For the first time, water is fully recognised in the portfolio of a European Commissioner to deliver a Water Resilience Strategy ([Political Guidelines](#), 2024) to strengthen water security in Europe by ([Mission Letter](#), 2024):

- Addressing water efficiency, scarcity, pollution and water related risks.
- Enhancing the competitive innovative edge of our water industry, develop clean tech, taking a circular economy approach.
- Including proposals to digitalise water management, cycles and utilities.

However, water-related priorities are notably absent from the mission letters of Commissioner for Industry, Clean, Just and Competitive Transition, and Energy and Housing. Only the Commissioner for Agriculture and Food and the Executive Vice President for Cohesion and Reforms are tasked with contributing to the Water Resource Strategy, highlighting a weak comprehensive approach for developing the EU water strategy. While agriculture's role in addressing climate risks and rural challenges is acknowledged, and urban and regional issues are vaguely mentioned, a cohesive, cross-portfolio approach remains missing.

This fragmented approach underscores the need for urgent action. Addressing Europe's water challenges—exacerbated by increasing water scarcity, environmental degradation, and their impacts on nature, agriculture, and business competitiveness—requires an integrated and structured response.

Water cannot be an adjustment factor in the programme of the new Commission, jeopardising competitiveness and environmental protection. Water resilience needs a holistic approach fostering water efficiency in agriculture, industry and households.

Moreover, water scarcity already affects 38% of the EU population and jeopardizes key industries such as semiconductors, data centres, renewable hydrogen, and electric vehicle battery production. Together, these four industries are valued at €192 billion and are forecast to grow to nearly €1 trillion by 2030. However, this expansion will bring a 2.6-fold increase in water demand, emphasizing the urgency for sustainable water management to meet future needs. Advanced technologies, such as water purification, closed-loop systems, water-efficiency technology for buildings, and a variety of digital tools, can reduce consumption and boost efficiency. These innovations could save Europe up to €3 billion annually while creating over 13,000 jobs.

With 29% of the EU's territory already experiencing water scarcity, this poses a serious threat to human communities and ecosystems, endangering not only economic progress but also the ecological balance needed to sustain future growth and protect our natural capital for future generations. The EU Commission estimated that the EU could face **€1.6 trillion** in annual damages if the continent does not manage water in an integrated manner.

In our [manifesto](#), Water Europe already stressed the need to have a Water fund.

Therefore, we urge the EU Commission to take decisive action to address water risks and harness the opportunities within each of its priorities, unifying these efforts through a comprehensive Water Resilience Strategy paired with a substantial Water fund.

A Water-Smart Society: Our Strategic Policy Goal

Water security must be a shared priority across the entire College of the EU Commission. It is essential to ensure that the ambition reflected in the mission letters is fully realised in practice, encompassing every aspect through an integrated approach, as progress in one area can be hindered by setbacks in another. Water Europe identified 4 horizontal recommendations:

1. Unlock Water-Smart Europe

A Water-Transition Fund ([WE manifesto](#), 2024) must be included in the next EU Multiannual Financial Framework Budget to accelerate the deployment of water-smart technologies, optimising water infrastructure for the current and future challenges (similar to [RePowerEu](#)). Paired with more clarity about the financial opportunities, the relevant stakeholders such as farmers, industrial actors, investors, property developers and builders, and local and regional authorities will be able to better mobilise public-private partnerships¹.

2. Leverage Digital Water Opportunities

Digital interoperability and data aggregation at the EU level remain challenging and must be overcome under an EU-wide Action Plan supporting the digitalisation of the water sector, and the development of the relevant skills². This is key across the entire water value chain at municipal, industrial and consumer levels, including for the upgrade and interconnection of green-grey infrastructures. The EU Commission should also support the introduction of a water accounting system with better interoperability of data, particularly at the EU level to facilitate decision-making processes, including quantitative water management paired with a *source-to-sea* approach³. Innovation in monitoring structural conditions through robotics and sensors, enhanced by AI, while also focusing on transparency,

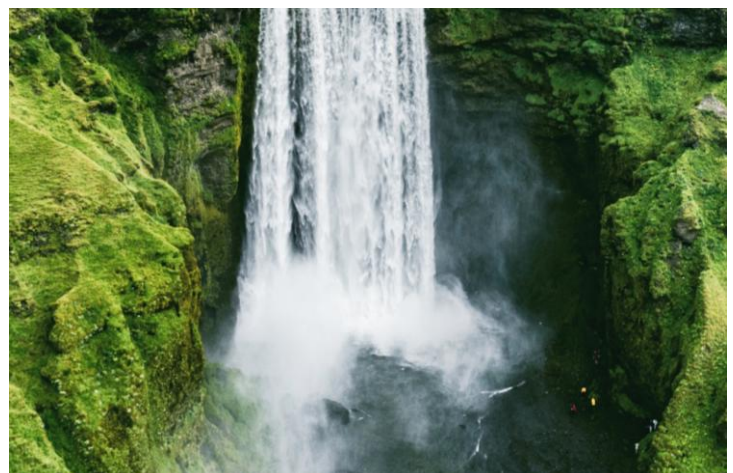
accountability, and fairness in algorithms and data handling will be required as well as protecting water infrastructure against cyber, physical, and hybrid threats. Manage, operate and allocate water could benefit from digitalisation.

3. Strengthen inclusive governance

A Permanent interservice group across Directorate Generals must be established. Similarly to [Destination Earth](#), Europe must develop an EU Monitoring Digital system both for quantitative and qualitative data. In the same vein, transboundary cooperation must be strengthened at the operational, tactical and strategic levels based on a river basin scale with mutual and harmonised processes and obligations. In line with the objectives of the Zero Pollution Strategy, deployment of Water-oriented Livinglabs across Europe could be leveraged to leverage innovative solutions, uniformity in the approach along the WEF E nexus and adaptation policies while fostering the dialogue between the different stakeholders⁴. In the same vein, this strategy should promote the development of new skills and job profiles within the water sector. This can help attract a diverse range of professionals and foster a new generation of water experts across Europe

4. Support disruptive Research & Innovation activities

Several technologies are on the market today. Still, Europe must maintain its leadership and competitive asset in this sector by developing the next generation of water-smart solutions thanks to Water-Smart Horizon Europe Programme and the creation of the water-KIC. Several aspects remain challenging such as disinfectant by-products removal and prevention⁵ or new available opportunities with Artificial Intelligence.



¹ For example, Le Cercle de l'eau released a publication on the water institutional landscape in France, stressing the fragmentation and complexity for investing in water (Le Cercle de l'eau, [Panorama du financement global de la politique de l'eau en France métropolitaine](#), Paris, décembre 2024).

² Cf. [European Commission, Digitalisation in the Water Sector: Recommendations for Policy Development at EU Level, Luxembourg, October 2022](#).

³ WE involved in different EU-funded projects, A critical part of them are calling for a better management and digitalisation along the river basin management with a source-to-sea approach (e.g. [ZeroPollution4Water cluster](#), [iMERMAID](#), [Nexogenesis](#)).

⁴ [UN Water Report, 2023, Zero Pollution Action Plan](#), 2022

⁵ C.f. H2OforAll and intoDBP EU-funded projects.

Realise Socio-Economic Benefits by Valuing and Investing in Water



Secure Biodiversity and Zero Pollution Objectives

Europe should maintain its leadership to achieve zero-pollution by ensuring the implementation and enforcement of the zero-pollution legislation, including the Drinking Water Directive (DWD), the Industrial Emissions Directive (IED), the newly revised Urban Wastewater Treatment Directive (UWWTD) and revise the Bathing Water Directive, in a source-to-sea approach⁶. Additionally, regulating water bodies' pollution at source through targeted measures in sectorial and chemical legislation to ensure the best benefits to our society. Treatment of pollution needs to be financed by the producer where possible⁷ such as PFAS⁸ as well as possible relevant stakeholders⁹. Similarly, tackling microbiological contamination alongside chemical pollutants would not only secure biodiversity but also reduce the public health burden linked to unsafe water, ensuring healthier and more resilient communities. A key focus should be placed on addressing microbiological pollution, which poses significant risks to public health, including waterborne diseases, outbreaks of harmful pathogens, and antimicrobial resistance.

Clean Industrial Deal: Strengthen EU Industrial Competitiveness

Industrial activities are particularly sensitive to the water-energy nexus. A Water-Efficiency first principle must be included in the EU acquis to overcome the barriers and accelerate the transition towards water-reuse and efficient processes¹⁰. We need to unlock the potential for reusing domestic wastewater in buildings, as well as the reuse of municipal wastewater by industry. Particularly, treated wastewater is a valid source for alternative uses (beyond agriculture irrigation) which can be reused, amongst others, for industrial, urban (including inside buildings) and leisure purposes, especially when the cost of water reuse is close to the cost of treating to discharge. In addition, there is a potential to strengthen our resilience by exploiting the resource embedded in wastewater such as phosphorus, improving our strategic autonomy. Paired with a properly implemented Industrial Emissions Directive, integrate comprehensive water management strategies into EU industrial policies and sector-specific transition pathways, emphasising water efficiency, conservation, and resilience must be developed. Quantitative water dependence of industrial actors must be assessed in the development and life of economic projects, turning it into a competitive asset. Lastly, it is a necessity to ensure the enforcement of the EU Taxonomy Regulation and adding to the list all economic activities substantially impacting water resources, particularly of how water is used, treated and reused.

⁶ It will also create synergies with the expected EU Ocean Pact. For more information see Water Europe position.

⁷ in line with the Polluter Payer Principal

⁸ For more information, see [Water Europe Position](#).

⁹ The deterioration principle in the Water Framework directive can compromise in certain cases future deterioration of water body as a barrier for the deployment of new or update water management infrastructure to reduce pollution (cf. Weser Ruling case).

¹⁰ The principle must be enshrined in law and with guideline like EEP1, accompanying water efficiency standards to be developed either per sector or for key water intensive industries.

Circular Economy Act: from wastewater to decarbonisation and resource recovery

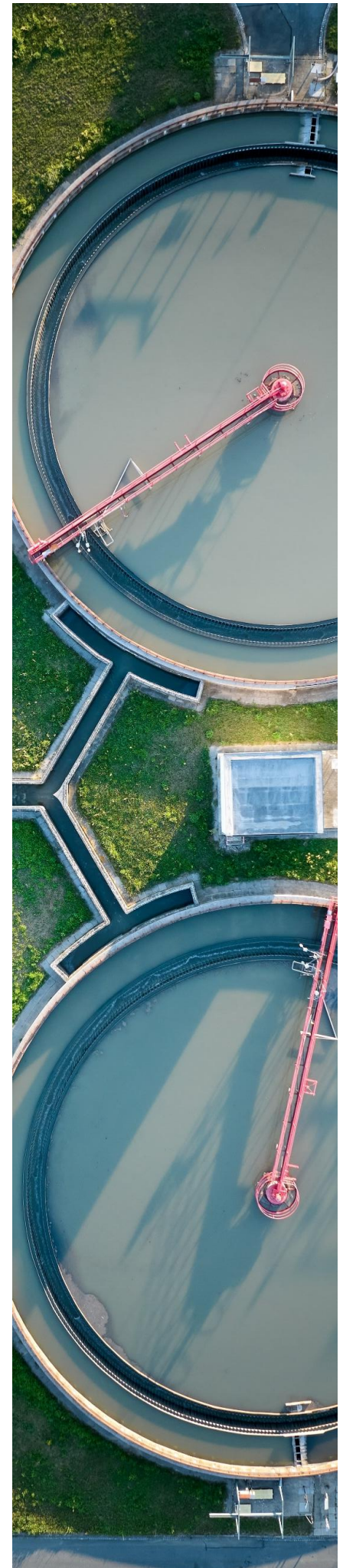
Water management can be a driver for decarbonisation and resource efficiency. Encouraging the reuse of wastewater and efficient technology in water-intensive sectors like semiconductors, and hydrogen, is strategic (with a fit-for-purpose approach). Fairwater metering can provide several benefits, including smart water meters in households. Other sectors also should foster water-efficient targets, including via Mechanisms to incentivise investments such as:

- Effectively implementing water-efficiency requirements for data centres in the Energy Efficiency Directive (EED).
- Recycling materials used by the water sector in its activities (eg. Pipes)
- Encouraging energy-water efficient products for sustainable use of water and energy in buildings by revising the relevant legislation (EPBD).
- Supporting wastewater reuse in renewable energy projects and manufacturing of net-zero technologies (RED and NZIA).
- Requesting water audit requirements for investments in net-zero technologies in the energy sector (Taxonomy).
- Ensuring proper implementation of the Eco-design for Sustainable Products Regulation such as the water footprint of product (ESPR)
- Revisit the existing legal framework to foster water efficiency and allow for safe water harvesting, use and reuse in the built environment (WFD, DWD).

Paired with specific freshwater-intensity labelling for water-intensive sectors can strengthen an economic nursery for strategic innovative value-chains in Europe. The water sector is also keen to take its responsibility to meet the new requirements of the revised Urban Wastewater Treatment Directive. Lastly, Europe must develop innovative business models. For example, urban wastewater treatment plants must be seen as resource hubs that can help recover critical raw materials (CRMA) such as phosphorus.

A Water-Smart Vision for European Agriculture

Agriculture and food processing are significant consumers of water, while they play a crucial role in ensuring our food security. The new Vision for Agriculture and Food should look at incentives on quantitative water management such as water reuse, nature-based solutions, water allocation between different sectors as well as diffuse pollution. Farmers are the front runners in protecting wetlands and peatlands as well as the fight against climate change. The EU Commission should explore water retention policy and encourage aquifer recharge by reviewing the current policy, as well as the use of the relevant digital tools to monitor the quantitative and qualitative status of groundwater and soils in cooperation with the agricultural sector, including by the development of collaborative structures between the relevant stakeholders to disclose the relevant data among relevant stakeholders. In addition, the use of reclaimed water must be effectively encouraged and the barriers overcome to provide further water allocation for agricultural purposes, and ultimately improve water retention. Such an approach goes hand in hand with a better consideration of the nutrient cycle and the exploitation of the value in urban wastewater, ultimately contributing to developing a competitive advantage for the sector.



Anticipate Water-related Climate Risks

As stressed in the Niinistö report, climate change is a threat multiplier, particularly for flood and drought. Anticipating climate-related water risks with a balance between prevention and response is needed. Ex Ante investments are required to ensure the resilience of water infrastructure, including via Nature-Based Solutions. Mobilisation of the different financial instruments under the MFF as well as private financing is needed. In synergy with the development of national climate mitigation & adaptation plans that include detailed water risk assessments, governance and adaptation measures should integrate both risks - floods and drought – and look at potential benefits of early warning systems. This approach must be paired with strong incentives to adopt digital and data-driven solutions, interoperability, and information sharing between the relevant stakeholders (cf. Bathing Water Directive).



Achieve the SDGs Agenda

In its Vision 2050 for Water, the EU made several commitments to achieve SDG 6. In line with the Global Gateway Strategy, the EU should support in partnership with the EU water stakeholders a water-smart roadmap to clarify the collaboration and financial opportunities, as well as its cooperation with the private sector to overcome the global investment gap in water infrastructure. This objective cannot be achieved without encouraging best practices such as the Water-Oriented Livinglabs to implement this roadmap and look to quantitative and qualitative water management.

Support access to water and sanitation for all is not only a fundamental human right but also a cornerstone of public health. It impacts the reduction of waterborne diseases, improves hygiene, and supports broader health systems. Investment in water infrastructure, including cross-border ones¹¹, to rehabilitate ageing infrastructure, increase water efficiency, reduce water leakages and resilience to climate change in cooperation between the rural, industrial and urban areas should be a key priority. These investments would directly contribute to reducing public health risks associated with unsafe water sources, improving overall community health, and mitigating the long-term health impacts of climate change, particularly in cooperation between rural, industrial, and urban areas.

¹¹ The EU-funded NEXOGENESIS project highlights the importance of cross-border collaboration and infrastructure development to improve the management of water resources, focusing on both quantity and quality.

Water-Smart Projects

Water Europe is involved in different EU projects which demonstrate innovative solutions to achieve a Water-Smart Society. All the following ones illustrate opportunities that could be leveraged in the Water Resilience Strategy.



iMERMAID is an EU-funded project focused on protecting the Mediterranean Sea basin, its sensitive ecosystems and the ecosystem services it provides, which play a crucial role in a variety of different socioeconomic activities. It aims to address the growing threats of chemical contamination and pollution caused by human activities, with a particular focus on contaminants of emerging concerns. iMERMAID intends to integrate innovative strategies for prevention, monitoring, and remediation, particularly around the Mediterranean Sea. This project builds upon the research and innovation activities of 11 projects. More information [here](#).

Encourage the European authorities to adopt a source-to-sea approach to reduce pollution of water and oceans while exploiting the benefits of the digitalisation of the water sector such as sensors; deploying inclusive governance and technologies to raise awareness and remove chemicals pollution.



IDEATION is an EU-funded project focused on creating a Digital Twin Ocean (DTO) of inland waters, linking rivers, lakes, and wetlands with the ocean. The project's success depends on the collaboration of an experienced consortium of 11 European partners. More information [here](#).

Support the development of a European Digital Twin for inland waters, interoperable with the Digital Twin Ocean currently under development, creating an integrated European Digital twin of ocean and inland waters.



AquaSPICE is an EU-funded project (Horizon 2020) that brings together 27 partners from 12 countries and aims at materialising circular water use in European process industries, fostering awareness in resource-efficiency and delivering compact solutions for industrial application. The project aims to reach this objective through the development and validation of water efficiency management and optimization methodologies, technologies and tools; the creation of a water-specific cyber-physical system; and the definition of effective methodological, regulatory and business frameworks. More information [here](#).

Provide a holistic approach by breaking the existent silos to empower cross-domain decision-making and enabling industries to share data. This approach must be paired with incentives to facilitate the integration of digital monitoring systems in water-smart symbiosis practices as well as interoperability and accessibility of the data in order to enable circular economy and process symbiosis strategies.



MULTISOURCE is an EU-funded project conducted from 2021 to 2025 that brings together 20 partners from 12 countries to create innovative tools, methods, and business models to support citywide planning as well as long-term operation and maintenance of nature-based solutions (NBS) for water treatment, storage, and reuse in urban areas worldwide. With seven pilots treating a wide range of urban waters, this project delivers new knowledge about enhanced natural treatment solutions (ENTS) and their ability to make cities more resilient to climate change, to remove waterborne contaminants and provide effective risk reduction for chemical and biological hazards. More information [here](#).



The **ZeroPollution4Water** cluster is an initiative originating from the coalition of 7 different projects funded from two Horizon Europe 2022 calls which aim to:

- Prevent groundwater contamination and protect its quality against harmful impacts of global and climate change.
- Secure drinking water quality by protecting water sources against pollution, providing innovative monitoring and treatment solutions, and ensuring safe drinking water distribution.

Focusing on the EU's zero-pollution ambition and the Green Deal, the cluster aims to leverage the cooperation and synergies among these 7 projects to develop advanced prevention and mitigation strategies, effective risk assessment and management systems, and innovative monitoring and treatment solutions for drinking water and groundwater management. It also aims to develop new technologies ready for the market to prevent or tackle water pollution. More information [here](#).



NEXOGENESIS is a 4-year (2021-2025) European research and innovation project funded by the European Commission under the H2020 programme. It gathers 20 partners from Europe and South Africa with the aim of enabling the next generation of intelligent water-related policies, using artificial intelligence and machine learning to assess policy impacts on the WEFE nexus and suggest improved policy design for coherence. The project conducts four EU case studies and one in South Africa. More information [here](#).

Encourage the deployment of NBS by the inclusion of 'technological subsidiarity principle' in the European legislation and facilitate research and innovation on NBS for quantifying and evaluating their co-benefits and raise awareness about this type of solutions for water management.

Encourage local authorities, infrastructure planners, and property developers to use evidence and needs-based tools to select water treatment and stormwater management technologies, paired with community-driven co-management of urban green spaces or the deployment of water-oriented living labs to better respond to local needs and encourage the deployment of innovative solutions.

Invest research and innovation on DBPs identification and removal to improve drinking water quality and contributing to the zero pollution strategy ; and develop a flexible regulatory framework for DBPs including iodinated and nitrogen containing DBPs (I-DBPs and N-DBPs). This approach must be paired with the minimisation of pollution of micropollutants, including microplastics, pathogens and DBPs in the drinking water networks.

Support the Water-Energy-Food-Ecosystem nexus approach by looking at the interconnections between the different EU policies in the Water Resilience Strategy. Particularly, this approach must be included in the River Basin Management Plans (RBMP).

Encourage local transboundary and cross-national nexus cooperation by clarifying and aligning the different legal framework, strengthening effective stakeholder participation and the implementation of the principle of subsidiarity principle ; secure financial support for a water-smart transition as well as improve data collection through systemic standardisation and interoperability at basin level.