

Initial proposal idea targeting Horizon Europe Call for proposal
“HORIZON-CL6-2025-02-CLIMATE-01-two-stage: Strengthening the resilience of water systems and water sector to climate and global socio-economic change impacts”

Deadline 04/09/2025 (First Stage) 18/02/2026 (Second Stage)

Integrated, Scalable Water Resilience through Smart Monitoring, Nature-Based Solutions, and Cross-Sectoral Planning

Overview

Climate change and rapid urbanization significantly increase the frequency and intensity of surface runoff and flash flooding, particularly in vulnerable urban and peri-urban areas. These phenomena not only pose direct threats to public safety and disrupt communities, but also damage critical infrastructure, including roads, water systems, and energy utilities.

In response, this project proposes an **integrated, data-driven water management system** to mitigate flood and drought risks, enhance aquifer recharge, improve water quality, and restore ecosystem resilience across urbanized catchments in the EU and Mediterranean regions.

Project Goals

The project aims to demonstrate scalable, policy-aligned pilot sites that integrate real-time, cross-sectoral water management. It will deploy modular decision-support systems using continuous monitoring and AI-driven modeling to support climate-resilient planning. By combining hydrological, ecological, and social data and promoting nature-based and hybrid infrastructure, the project will enable multifunctional land use that enhances both environmental and infrastructure resilience.

Key Innovations

The project will integrate real-time monitoring and AI-powered predictive control through advanced hydrological sensors and IoT infrastructure, enabling early warnings for flash floods and informed emergency response. It will include smart groundwater management based on real-time aquifer data, minimizing environmental impact and preserving ecological functions. Nature-based and hybrid infrastructure will shape multifunctional urban landscapes, while hybrid modeling frameworks will enhance forecasting accuracy. Public participation will be fostered through citizen observatories and community engagement, ensuring trust, awareness, and inclusive decision-making.

Demonstration and Transferability

The project will be managed by a multidisciplinary consortium that includes the flood regulation park, universities, research institutes, with expertise in hydrology, IoT, spatial planning, environmental law and policy, and participatory governance.

The flagship demonstration site is Ariel Sharon Park in the Tel Aviv metropolitan area, featuring a 6 million m³ floodwater retention basin and government-supported infrastructure for dynamic flood control. Exposed to Mediterranean climate challenges, the site provides an ideal testbed for smart monitoring and nature-based solutions. Additional EU sites will ensure diverse validation. Ariel Sharon Park will serve as a model for transforming vulnerable urban areas into climate-resilient systems, with outcomes informing both national and EU-level policy and planning.

Partners – confirmed and foreseen

Partner	Foreseen role	Type	Country
Ariel Sharon Park	Leading partner – Implementation and coordination of the national pilot + demonstration site	Government-owned company	Israel
Bar Ilan University	Subsurface hydrology Environmental law and policy	Academia	Israel
TBD	Development and manufacturing of water monitoring & management system	TBD	TBD
TBD	Hydrometeorology & remote sensing	TBD	TBD
TBD	Data analysis and system modeling	TBD	TBD
Agma	Dissemination, communication, policy recommendations, implementation	PBC	Israel
European Park/City	Demonstration site and more...	TBD	Europe
European Park/City	Demonstration site and more...	TBD	Europe
TBD	Water management policy expertise	Academia/ Industry	Europe
TBD	Biodiversity & Ecology	TBD	TBD
TBD	Exploitation	TBD	Europe

Guy Mizrahi,

Manager of Environmental
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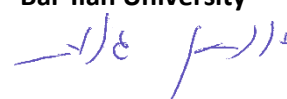
Ariel Sharon Park Ltd.



Yonatan Ganot,

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Bar-Ilan University



Annex – Call text

The indicative deadline for this call is 4 September 2025 (First Stage), 18 February 2026 (Second Stage)

HORIZON-CL6-2025-02-CLIMATE-01-two-stage: Strengthening the resilience of water systems and water sector to climate and global socio-economic change impacts

Call: Cluster 6 Call 02 – two stage	
Specific conditions	
<i>Expected EU contribution per project</i>	<i>The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.</i>
<i>Indicative budget</i>	<i>The total indicative budget for the topic is EUR 18.00 million.</i>
<i>Type of Action</i>	<i>Innovation Action</i>
<i>Admissibility conditions</i>	<i>The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal under the blind evaluation pilot (see General Annex F) must not disclose their organisation names, acronyms, logos, nor names of personnel in Part B of their first stage application (see General Annex E).</i>
<i>Eligibility conditions</i>	<i>The conditions are described in General Annex B. The following exceptions apply:</i> <i>The Joint Research Centre (JRC) may participate as member of the consortium selected for funding.</i> <i>If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).</i>
<i>Technology Readiness Level</i>	<i>Activities are expected to achieve TRL 6-7 by the end of the project– see General Annex B.</i>

Expected Outcome: *In line with the European Green Deal, notably the EU climate adaptation strategy, the Nature Restoration Regulation, EU water legislation and the upcoming European water resilience strategy, successful proposals will contribute to the impact of this Destination on adaptation and mitigation of water systems in the context of climate change, supporting also biodiversity protection and restoration.*

Project results are expected to contribute to all of the following expected outcomes:

- assessing and managing better the changing hydrological cycle, also at fine spatial scales, to reduce water risks amplified by climate change, including floods and droughts, by fostering further development of innovative observing systems to monitor trends in the atmospheric hydrological cycle; by fostering water resilient land use, management and planning and natural water cycle restoration, also contributing to support biodiversity protection/restoration; and by enhancing cross-sectoral and transboundary catchment cooperation between various water use sectors and complementarity between water related policies;*

- increasing water use efficiency in all sectors at basin level, balancing better water demand and supply, helping to transform the economics and restructuring the governance of water;
- helping policy makers to prepare for better water infrastructure management and planning allowing among others fair access to drinking water and other essential uses.

***Scope:** We face a triple interrelated planetary crisis of climate change, biodiversity loss and pollution. Water is at the heart of these challenges. We can no longer ignore the world's crisis of water. The global hydrological cycle is changing. During the last three consecutive years, we have also witnessed not only worrying droughts in many regions of the EU, reaching eastern and northern countries which have been so far preserved, but also catastrophic pollution incidents and deadly floods across Europe. These events are no longer exceptional events. As scientists revealed very recently, human-caused climate change has made these episodes at least 20 times more likely. Moreover, groundwater levels sink steadily in Europe and globally, and the EU water balance is greatly perturbed. This increases tensions in agriculture, energy production and water supply and it is threatening drinking water, food and energy security, the health of ecosystems and the services they deliver, and our way of living.*

These issues are highly interlinked, and they must be addressed together, under the remit of the water, energy, food, and ecosystem (WEFE) nexus. Moreover, recent JRC research shows that reduced freshwater flow of rivers into the sea can have severe impacts on coastal and marine ecosystem and their services, for example wild capture fisheries. This emphasizes the need to adopt the “from the source to the sea” approach when tackling water resilience with a support to biodiversity protection/restoration.

According to the EC communication “Managing climate risks – protecting people and prosperity”, “protecting and restoring the water cycle, promoting a water-smart EU economy and safeguarding good quality, affordable and accessible freshwater supplies to all is crucial to ensure a water-resilient Europe. [...] Water needs to be managed, and human demand needs to be adjusted to the new and more scarce supply”.

The objective of this topic is to compare and demonstrate the potential of available state of the art tools to forecast the availability of water resources at the regional and local scale, building also on JRC and other available tools developed for the European scale¹. It should take into consideration both the global water cycle (blue and green water) and sectoral water demands for both seasonal and long-term horizon, with an integrated water management approach. It should consider water allocation tools for different uses integrating the quality needed for each use, as well as tools for resilient urban planning and water infrastructure management allowing among others run-off control, reducing flood and drought risks, ensuring safety of citizens and infrastructures and support to biodiversity protection/restoration.

Demonstrations should take place in diverse European regions on a suitable scale e.g., river basin, and should bring together a wide range of relevant stakeholders, including relevant water sectors, water managers and authorities, urban and rural planners, policy makers and the civil society. Solutions aiming at fostering and restoring natural retention measures to keep water in the landscape, mitigating drainage losses, enhancing water retention in watersheds to mitigate extreme events, including both drought and flood, should be explored. Proper attention should be given to actions aiming at overcoming the fragmentation of water monitoring and observation data by strengthening the complementarity between satellites, in situ data, participatory research and integrated assessment models. This should foster the consolidation for better-quality and higher frequency data, reducing uncertainty and increasing trust and making them responsive to end-users' needs.

¹ <https://publications.jrc.ec.europa.eu/repository/handle/JRC124342>

Appropriate climate change adaptation and mitigation strategies and tools, such as, tools for resilient urban and rural planning to manage runoff, reduce flood risk and ensure the safety of citizens and water infrastructures, should then be developed to strengthen the resilience of the water sector. These strategies should in particular assess the following:

- strategies and technical cost-efficient and sustainable solutions for alternative water resources production adapted to the anticipated use;*
- the governance of water resource management to better consider the interlinkages of various water related policies to ensure reliable allocation of water for different uses and cross-sectoral coordination;*
- the suitability of current indicators to appropriately define water efficiency in various sectors and provide a harmonised methodology to increase water efficiency;*
- strategies to anticipate the consequences of recurrent extreme events, including land use analysis (e.g. floods and droughts) and reduce the associated risks;*
- water resilience by exploring water transfer effects for seasonal, annual and pluriannual time-horizon on ecosystems, populations, agriculture, industrial consumption;*
- the suitability of solutions to support biodiversity protection/restoration with attention given to avoiding spread of invasive alien species and to ensuring enough water for entire ecosystems (all species and their populations in healthy state).*

Moreover, the economic foundation of the current water management systems, including water pricing and trade policies, in the context of changing climate should be reviewed to provide elements for a new economic framework helping to better structure the cost of building/operating/monitoring the water infrastructures, increase demand for innovative solutions and strengthen private investments for large scale deployment of these solutions in the water sector.

Proposals should avoid duplication with related ongoing work of the JRC and other EU funded projects, while strengthening complementarities with relevant EU Missions and Partnerships (e.g. Water4All, Biodiversa+). Proposals should build on the assessment reports of the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), particularly the forthcoming IPBES nexus assessment. Where relevant, proposals should build on or further enhance existing hydrological modelling tools and water relevant tools and datasets of the Copernicus Emergency Management Service, Climate Change and Land Monitoring Services and leverage products and services offered by the from Destination Earth initiatives. Proposals should build synergies and complementarities with other related Horizon Europe projects. To this end, proposals should plan the necessary budget to cover related cluster activities.

This action should bring together a wide range of relevant stakeholders, i.e, researchers, technology providers, water utilities, business representatives, investors, policy makers and other water users and citizens to maximise impact. When engaging stakeholders, gender and other social categories (disability, age, socioeconomic status, ethnic and / or cultural origins, sexual orientation, etc.), and their intersections, need to be considered. The possible participation of the JRC would ensure that the assessment of available state of the art tools to forecast the availability of water adequately integrates the existing JRC related work.

Due to the strong socio-economic dimension of water management, the integration of SSH, including gender studies, and Citizen Social Science approach expertise are also needed to ensure the proposed climate change adaptation and mitigation strategies are socially accepted and no one is left behind.