



SD-WISHEES



Joint Vision

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List of Partners

Acronym	Full title
CNR	(Coordinator) National Research Council of Italy (CNR)
AAS	The African Academy of Sciences
IRMI/KMI	Institut Royal Meteorologique de Belgique
WEG	World Experience for Georgia
EWA	Energy and Water Agency
CMCC	Fondazione Centro Euro-Mediterraneosui Cambiamenti Climatici
ISPRA	Italian Institute for Environmental Protection and Research
UEFISCDI	Unitatea Executiva Pentru Finantarea Invatamantului Superior A Cercetarii Dezvoltarii Si Inovarii
GSES	Gses Management B.V
ANR	Agence Nationale de la Recherche
MUR	Ministero dell'Università e della Ricerca
UEVORA	University of Evora
PRIMA	Fundación Prima
ECOALBANIA	EcoAlbania
BELSPO	Service Public Fédéral de Programmation Politique Scientifique
PAL	Project Aid Ltd

SUMMARY

The SD-WISHEES Joint Vision document outlines a collaborative strategy to protect cultural and natural heritage from the growing threats of hydroclimatic extremes, such as floods and droughts, across Europe and beyond. The project is committed to promoting inclusive, transdisciplinary research and innovation efforts, strengthening links between science, policy, and communities to build resilience and sustainability in heritage protection.

Climate change exacerbates the vulnerability of both tangible assets, such as monuments and landscapes, and intangible assets, such as traditions and knowledge systems, with hydroclimatic extremes posing serious risks to heritage, economies, and social cohesion. In particular, regions with limited resources and fragmented governance face added challenges in effectively safeguarding their cultural legacy and participating in European research and innovation initiatives.

SD-WISHEES identifies six strategic priorities for action: policy innovation for integrated governance, capacity building and knowledge sharing, advancing technical tools for resilience, adaptation planning, strengthening international cooperation, and ensuring inclusive uptake of research and innovation results. The project aims to empower stakeholders including policymakers, scientific communities, businesses, local communities, and international partners, by co-creating adaptive solutions and supporting market, policy, and societal benefits.

Implementation mechanisms include annual thematic programming, collaborative workshops, stakeholder surveys, and monitoring dashboards to ensure transparency and impact tracking. Barriers to collaboration, inclusion, and resource mobilization are systematically assessed to inform recommendations and future initiatives, with an understanding that building knowledge hubs and shared networks is an ongoing process beyond the project's initial timeframe.

Most importantly, the Joint Vision is a living document. It will be continually updated throughout future stages of the project to ensure alignment with strategic priorities identified in the evolving roadmap (WP2) and to reflect lessons learned and emerging challenges identified by the stakeholders. This ensures that the collaborative vision remains relevant, inclusive, and impactful for future generations. Forthcoming version of the Joint Vision is planned on June 2026, when new elements from the SD-WISHEES strategic documents “Updating Roadmap” (D2.4) and “Set of recommendations” (D6.3) will be available.

THE CULTURAL HERITAGE CHALLENGE

Cultural heritage, as defined by UNESCO, represents the legacy we receive from the past, live in the present, and pass on to future generations — it embodies who we are and what shapes our collective identity. Cultural heritage extends beyond monuments and collections of objects (tangible culture) to include intangible dimensions such as languages, traditions, knowledge systems, and social practices, as well as natural heritage like landscapes and biodiversity. Together, these elements form the cultural and ecological fabric that sustains societies and their sense of belonging.

Placing culture at the heart of sustainable development is essential to ensuring a human-centred, inclusive, and equitable transition. The safeguarding and promotion of cultural heritage is both an end in itself and a

vital driver of the three pillars of sustainability — social, economic, and environmental. Global policy frameworks, including the Paris Agreement and the United Nations 2030 Agenda for Sustainable Development, explicitly recognise the role of culture in supporting more resilient and adaptive socio-economic and governance models.

Scientific evidence increasingly highlights that climate change, particularly through its impacts on water, poses a serious threat to the preservation of cultural heritage. Gradual temperature variations, combined with hydro-climatic extremes such as floods and droughts, accelerate the deterioration of cultural assets and disrupt traditional ways of life. Water-related hazards have been identified as a leading factor in the degradation of cultural heritage, particularly in Europe. These risks manifest through multiple pathways — from flooding, sea-level rise, and weathering to the loss of wetlands, salinisation, and changes in land use — as well as through the socio-economic consequences of water crises. According to UNESCO assessments, as of March 2021¹, 35% of natural sites and 21% of cultural assets (both tangible and intangible) face high flood risk, while prolonged droughts and desertification contribute to the degradation of sites and the erosion of indigenous knowledge and traditions.

Societies have long recognised the importance of protecting cultural heritage for its educational, historical, and identity values. While national initiatives — such as those in Japan, Italy, Turkey, and the United Kingdom — have developed innovative approaches for conservation and restoration, global frameworks such as the Sendai Framework for Disaster Risk Reduction (2015–2030) and the Sustainable Development Goals provide a shared foundation for coordinated action. Yet, in the face of intensifying climate- and water-related hazards, renewed international cooperation is urgently needed to safeguard cultural assets and to develop innovative, sustainable measures for their protection, restoration, and adaptive management.

The scientific community has a pivotal role to play in this effort. By advancing knowledge on the complex interactions between water systems, climate dynamics, and cultural assets, research can support the design of effective adaptation measures and inform decision-making processes. This requires strong transdisciplinary collaboration — combining expertise in hydrology, climate and biological sciences, heritage studies, engineering, social sciences, and policy analysis — as well as mechanisms for translating scientific insights into policy and community action. In this regard, transnational research and innovation initiatives such as the Joint Programming Initiatives (JPIs), PRIMA, and the SD-WISHEES project itself provide a unique platform to coordinate research, align national efforts, and strengthen the science-policy interface.

Through this Joint Vision, SD-WISHEES seeks to build on these foundations to promote a more integrated approach linking **water resilience, cultural heritage preservation, and sustainable development**, ensuring that the legacy of the past continues to inspire and sustain the societies of the future.

WHAT ARE THE MAIN DRIVERS?

Hydro-climatic extreme events are becoming more frequent and severe, threatening both cultural and natural heritage across Europe and beyond. Furthermore, the Mediterranean basin is considered a climate change “hotspot” because it is warming faster than the global average, with more severe impacts like heatwaves, droughts, extreme precipitation events and sea level rise. Floods damage historic cities and monuments, droughts compromise traditional landscapes fostering land degradation phenomena, heatwaves negatively

¹ Arrighi, C. (2021). A global scale analysis of river flood risk of UNESCO World Heritage Sites. *Natural Hazards and Earth System Sciences*, 21(11), 3417–3432. <https://doi.org/10.5194/nhess-21-3417-2021>

impact socialization, and storms accelerate the deterioration of fragile sites. Climate change, combined with urbanisation and environmental degradation, is amplifying these threats. Cultural heritage – monuments, buildings, artefacts, landscapes, traditions – is increasingly exposed to multiple and interlinked risks. Natural heritage, such as wetlands, forests, and river basins, which form part of cultural identity, is equally at risk. These vulnerabilities also affect tourism, traditions, local economies, and community cohesion. At the same time, widening countries, specifically including in the Balkans and Africa, face structural barriers to participating in European research and innovation (R&I). Limited resources, fragmented governance, and a lack of technical capacity prevent many regions from fully engaging in transnational programmes. This not only widens the innovation gap but also undermines collective capacity to respond to shared challenges and address the Water-Climate-Cultural Heritage (WCCH) Nexus. The SD- WISHEES project addresses these drivers by linking heritage protection with climate resilience and inclusive participation.

WHAT IS THE VISION?

The vision of SD- WISHEES is to enhance collaboration and strategic alignment between EU and Widening countries in R&I to tackle effectively the impacts of hydro- climatic extremes on cultural and natural heritage.

It aspires to safeguard heritage as a driver of sustainable development, strengthen social resilience, and promote inclusivity by bridging regions and actors under- represented in European R&I. Heritage is understood not only as the legacy of the past but as a foundation for identity, wellbeing, and innovation. A resilient heritage contributes to community cohesion, inspires creativity, and supports the green and digital transitions.

This vision recognises that protecting both tangible and intangible cultural heritage assets, as well as natural heritage, from hydro-climate extremes is an investment in the future, especially for supporting sustainable new generations. It is about ensuring that monuments, landscapes, traditions, and ecosystems continue to inspire, sustain, and connect future generations, contributing to Hydro- Climatic Resilient Heritage.

WHAT IS THE MISSION?

The mission of SD- WISHEES is to mobilise, align, and reinforce R&I efforts across multiple-sectors and regions in Europe and beyond. It seeks to create a coherent WCCH framework where science, policy, and society co- produce solutions and tools for the protection of cultural heritage facing the challenges posed by the increase of hydro- climatic extreme events due to climate change. SD- WISHEES will deliver practical strategies to support governance innovation, knowledge expansion, and the development of tools and methodologies in the context of the WCCH Nexus.

The mission also emphasises inclusivity. By empowering widening countries, building capacity, and creating opportunities for participation of the youngers, SD- WISHEES ensures that no region and no person are left behind. Heritage resilience requires shared responsibility, collective innovation, and solidarity across borders and generations.

WHAT ARE THE GRAND CHALLENGES?

Safeguarding cultural and natural heritage from hydro-climatic extremes requires overcoming a series of interconnected challenges:

- Fragmented governance and policy frameworks limit coherent and integrated action across heritage, climate, and water sectors.
- Knowledge and capacity gaps hinder the ability of professionals and communities to anticipate, assess, and manage risks.
- Technological limitations include a lack of tailored monitoring systems and predictive tools for heritage resilience.
- The increasing frequency and intensity of extreme events, such as floods, droughts, heatwaves, and storms, multiplies the risks to fragile cultural and natural heritage assets.
- The unequal participation of widening countries in European R&I exacerbates innovation and protection gaps.
- Insufficient uptake of research results means that scientific knowledge is not adequately translated into policy, practice, or community benefit.

These challenges are systemic. Addressing them requires integrated approaches that combine science, policy, governance, and community action. They also demand cross-border and inter-generation cooperation, as hydro-climatic extremes do not respect political boundaries or exclude any category of individuals. SD-WISHEES is uniquely positioned to bridge these gaps by aligning research agendas, mobilising stakeholders, and promoting inclusive solutions.

TARGET GROUPS OF THE SD-WISHEES JOINT VISION

The SD-WISHEES joint vision aims to create a shared framework for addressing systemic challenges at the intersection of **water, innovation, sustainability, health, environment, and society**. Its outcomes are designed to generate tangible benefits for a wide range of target groups who play essential roles in shaping water-related research, policy, and practice across Europe and beyond.

1. Policymakers and public authorities

National, regional, and local authorities responsible for water, environment, cultural heritage, and health policies are key beneficiaries of SD-WISHEES. The project provides them with evidence-based recommendations and policy tools to strengthen the integration of water, climate and cultural heritage objectives in strategic planning and regulatory frameworks. By facilitating access to consolidated scientific knowledge, SD-WISHEES supports the design of more coherent and resilient policies that align with the Sustainable Development Goals and the EU's Water Resilience and Climate Adaptation strategies.

2. Research and innovation communities

The scientific community — including universities, research centres, and innovation clusters — stands at the core of SD-WISHEES. Through collaborative agenda-setting activities, innovation exercises, knowledge synthesis, and shared research priorities, the project enables researchers to identify gaps, align agendas, and develop interdisciplinary approaches. It also fosters stronger connections between water, climate and

cultural heritage research domains, promoting innovation pathways that address emerging risks and support sustainable solutions.

3. Water, climate and cultural heritage sector practitioners and businesses

Utilities, SMEs, technology providers, and consulting firms in the water, climate and cultural heritage sectors will benefit from SD-WISHEES through improved access to research outcomes, demonstration projects, and opportunities for collaboration in innovation ecosystems. The project’s emphasis on co-creation and demonstration encourages the uptake of new technologies and nature-based solutions, while strengthening the links between scientific advances and market deployment.

4. Civil society and local communities

SD-WISHEES also targets citizens, NGOs, and community organisations that contribute to stewardship and awareness. By promoting inclusive dialogue and knowledge sharing, the project enhances public understanding of water-climate-cultural heritage interlinkages and supports behavioural change. Empowering communities to participate in decision-making processes strengthens social ownership of policies and solutions.

5. European and international partnerships

Finally, SD-WISHEES serves as a bridge between European initiatives and global frameworks. International organisations, funding agencies, and networks will benefit from the project’s insights on how to coordinate actions, align strategies, and scale up successful practices. The joint vision thus contributes to building a stronger, more coherent global research and policy landscape for water, climate and cultural heritage.

WHAT ARE THE STRATEGIC PRIORITIES?

Building on the roadmap² and extensive stakeholder consultation, SD-WISHEES identified up until now six strategic priorities:

1. Governance & Policy Innovation – Strengthening frameworks to integrate climate resilience into heritage governance at local, national, and European levels.
2. Knowledge Sharing & Capacity Building – Developing skills, training, and co-learning platforms for heritage and climate professionals and communities.
3. Technical & Methodological Advances – Creating innovative monitoring systems, modelling tools, and decision-support instruments tailored to heritage resilience.
4. Adaptation & Resilience Planning – Embedding disaster risk reduction and climate adaptation into heritage management and urban/rural planning.

² The SD-WISHEES Draft Roadmap defines strategic directions to strengthen research and innovation (R&I) collaboration for protecting cultural heritage from hydroclimatic extremes. The roadmap aims to identify R&I gaps, enhance governance and policy integration, promote cross-regional cooperation (especially between Europe, the Balkans, and Africa), and foster inclusive, community-driven adaptation strategies. The roadmap emphasizes context-specific, sustainable solutions that link scientific research, traditional knowledge, and local participation. To achieve these goals, it uses among others collaborative R&I platforms (e.g., JPI Climate, Water JPI), desk reviews, stakeholder workshops and interviews. Capacity-building, open knowledge sharing, and participatory co-creation processes with women, youth, and heritage custodians are central tools. Good practices, such as ProteCHt2save and ICCROM’s “Net Zero: Heritage for Climate Action,” (identified in innovation pathways assessment) serve as replicable models.

5. Regional & International Cooperation – Strengthening cross- border networks, joint research calls, and widening participation initiatives.
6. Innovation Uptake & Societal Integration – Ensuring that research outcomes inform markets, policies, and civil society, supported by inclusive pathways and communication.

Together, these priorities form a comprehensive agenda. They emphasise the importance of linking technical innovation with policy change, capacity building, and societal engagement. The SD- WISHEES Joint Vision is not only about producing knowledge but also about creating pathways for impact.

HOW WILL THE VISION BE IMPLEMENTED AND MONITORED?

The cornerstone of SD-WISHEES' implementation strategy is the **Thematic Annual Programming (TAP) action**, a structured instrument designed to catalyse collaboration across national and regional research-and-innovation (R&I) projects. Through TAP, SD-WISHEES brings together networks of funded projects around a common theme — in this case “protection of cultural heritage in response to hydro-climatic extreme events”. The TAP action fosters joint activities such as workshops, data sharing, capacity building and knowledge exchange among participating projects (so far from France, Greece, Malta, Moldova and Romania) and will run until December 2026. In this way, TAP serves both as a platform and a tool: it creates structured interactions and joint learning, links projects working in parallel, and sets a tempo for alignment of activities and monitoring of progress. The planned “Implementation Plan” of the TAP captures milestones, expected deliverables and collaboration mechanisms.

In parallel, SD-WISHEES is deploying the tool of **Innovation Pathways** to map, analyse and support how research and innovation on water-climate-heritage evolve from idea to uptake. The project describes Innovation Pathways as the processes by which R&I outputs become concrete solutions, scaled interventions and ultimately system-level changes. The mapping exercise has already identified over 60 possible pathways, of which 17 have been selected for in-depth analysis (covering technology development, capacity development, policy influence and enabling environments). By using this tool, SD-WISHEES will identify mature and impactful innovations, highlight enablers and barriers to uptake, and provide guidance to funding agencies, policy makers and practitioners on how to accelerate adoption, scaling and systemic change in the field of cultural heritage adaptation to hydro-climatic extremes.

Another critical implementation tool is the **assessment of barriers to collaboration** and widening of R&I participation, especially in the water-climate-heritage nexus. Work Package 5 (WP5) is dedicated to understanding what prevents or limits borderless cooperation among funding organisations, research performing organisations and other stakeholders — for example in widening countries or across sectors. The methodology uses e-surveys, one-to-one interviews and group discussions. The insights gathered will feed into recommendations for policy instruments, funding programme design and collaborative frameworks. By systematically diagnosing institutional, financial, governance, data-sharing and capacity barriers, SD-WISHEES equips the community with actionable knowledge to make R&I collaboration more inclusive, efficient and impactful.

Finally, although SD-WISHEES will deliver many outputs and establish key networks, the project recognises that **the establishment of a full-fledged “Knowledge Hub”** (a permanent, capacity-building, networking and data-sharing platform) cannot be completed within its timeframe. Therefore, the project is committed to guiding the development of such a hub under a complementary programme or by successor initiatives. This guiding role involves defining the conceptual architecture, curating the initial content (innovation pathways, barriers database, TAP network metadata), and establishing the partnerships and governance structures. Through this phased approach, SD-WISHEES ensures that its tools and outputs do not remain static, but are handed over in a coherent and sustainable manner to a future entity that will maintain and extend the hub, thereby prolonging the legacy and impact of the project.

WHAT ARE THE ILLUSTRATIVE APPLICATIONS?

The Joint Vision will be applied in diverse contexts, demonstrating its relevance and adaptability:

- Cultural landscapes, such as terraced agriculture, face risks of erosion, drought, and flooding.
- Wetlands and forests, which provide ecosystem services and cultural value while buffering hydro-climate extremes.
- Traditional knowledge systems in water management and land use, which offer adaptive practices developed over generations.
- Historic urban areas that integrate blue- green infrastructure to address flooding, overheating, and air quality issues.
- Transboundary heritage sites, including river basins and mountain ranges, require cooperative climate- resilient management.

WHAT ARE THE EXPECTED IMPACTS?

By implementing this vision, SD- WISHEES expects to achieve multiple impacts:

- Cultural and natural heritage safeguarded and resilient to hydro- climatic extremes.
- Communities empowered to co- create, adopt, and implement adaptive and sustainable solutions.
- Increased participation of widening countries in European and international R&I programmes.
- Contributions to European and global policy frameworks, including the Green Deal, SDGs, and the EU Climate Adaptation Strategy.
- Sustained uptake of innovations across governance, policy, markets, and society, ensuring long- term legacy.

The SD-WISHEES project aims to reinforce the European Research Area (ERA) by fostering closer alignment between national and transnational research and innovation (R&I) programmes on water-related challenges. Its impacts extend beyond the scientific community to influence policies, institutions, and societies, generating systemic changes that will strengthen Europe’s capacity to respond to the intertwined challenges of water resilience, environmental sustainability, and cultural heritage preservation.

At the **strategic level**, SD-WISHEES enhances the coherence and effectiveness of European R&I systems by improving coordination, alignment, and synergies among programmes and funding organisations. Through joint programming and foresight-based approaches, the project contributes directly to the objectives of the ERA, particularly its actions on prioritisation and the optimisation of national R&I investments. SD-WISHEES also supports the full participation of **Widening countries** in collaborative R&I efforts, reinforcing research capacities, bridging geographical divides, and promoting balanced European excellence. Furthermore, the project strengthens international cooperation with neighbouring regions such as the Balkans, the Mediterranean, and Africa, thereby amplifying Europe’s global leadership in water and sustainability research.

The project’s **impact on national research programmes** is achieved through the development of a shared strategic framework and common research agendas. By pooling resources, harmonising funding schemes, and sharing knowledge, SD-WISHEES optimises the use of public investments while avoiding duplication of efforts. This alignment of priorities promotes the emergence of a coordinated, impact-driven network of national and regional programmes. It also empowers less experienced research funders by fostering mutual learning,

capacity building, and cross-country cooperation, which together contribute to a more integrated European research ecosystem.

For the **research and innovation community**, SD-WISHEES stimulates scientific excellence and interdisciplinary collaboration. The project strengthens links between disciplines—such as hydrology, climate studies, cultural heritage, and social sciences—while providing new opportunities for transnational networking and joint projects. SD-WISHEES aims to enhance the quality, visibility, and societal relevance of research. This, in turn, accelerates the generation of innovative solutions to pressing water-related challenges and improves the translation of research results into policy and practice.

The project also delivers strong **socio-economic and policy impacts**. By improving the science-policy-society interface, SD-WISHEES ensures that research findings are effectively communicated and transformed into actionable recommendations for decision-makers. The project develops practical policy tools and supports the implementation of adaptive governance models that foster trust, transparency, and stakeholder participation. These outcomes strengthen the resilience of European societies and economies in the face of climate change and resource scarcity. The project contributes directly to the achievement of several Sustainable Development Goals (SDGs), notably **SDG 6 (Clean Water and Sanitation)**, **SDG 11 (Sustainable Cities and Communities)**, and **SDG 13 (Climate Action)**, while reinforcing European cohesion and reducing regional disparities.

From an **environmental and cultural perspective**, SD-WISHEES promotes innovative approaches to protect ecosystems, water resources, and cultural heritage against the impacts of hydroclimatic extremes. The project contributes to the implementation of the **European Green Deal**, the **EU Water Resilience Strategy**, and the **European Strategy for Climate Adaptation** by supporting climate adaptation, restoration, and risk management measures. Its demonstration activities will serve as practical showcases of sustainable solutions that integrate environmental, cultural, and socio-economic dimensions.

Finally, SD-WISHEES embeds **cross-cutting impacts** that ensure the sustainability and inclusiveness of its results. Open Science principles, gender equality, and the “Do No Significant Harm” approach are fully integrated across all project activities. Through stakeholder engagement, knowledge dissemination, and policy dialogues, SD-WISHEES ensures that its outputs—such as the Joint Vision, policy briefs, and strategic roadmap

—remain accessible and relevant well beyond the project’s lifetime. The project’s long-term legacy will be a strengthened, more interconnected European research and innovation community, capable of transforming scientific knowledge into actionable strategies that enhance water resilience, protect cultural heritage, and support sustainable and inclusive development.

WHAT IS THE CALL TO ACTION?

“Building resilient heritage means building resilient societies.”

The Joint Vision of SD- WISHEES calls on policymakers, researchers, funders, and communities to work together. It is an invitation to co- create adaptive, inclusive, and sustainable systems for heritage protection in the face of hydro- climatic change. This requires shared responsibility, solidarity, and investment in research and innovation. By uniting our efforts, we can ensure that cultural and natural heritage continues to inspire, educate, and sustain generations to come.



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