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Protecting Coastal Aquifers and Related Ecosystems for a Water-Secure Mediterranean through science and integrated management approaches

UNESCO Intergovernmental Hydrological Programme (UNESCO-IHP) in partnership with UNEP-MAP and IME

Euro-Mediterranean Water Forum 2026 · 29 September – 2 October · La Nuvola, Rome

KEY INFORMATION

Date	30 September 2026
Time	11:30 – 13:00
Room	Room Itaca
Format	Special Session with a keynote presentation and panel discussions
Language(s)	English

SUMMARY

The special session will share solutions and lessons from UNESCO's MedProgramme work in five priority Mediterranean coastal aquifers. Participants will explore integrated responses to overexploitation, pollution, seawater intrusion, ecosystem degradation, and climate change.

AGENDA & SPEAKERS

Time	Speaker Name & Title	Organization	Role / Topic
11:30	***Welcoming remarks***		
	Miguel Doria, Director	*UNESCO-WWAP*	*Speaker*
	Tatjana Hema, Coordinator	*UNEP-MAP*	*Speaker*
	Keynote on Coastal Aquifers: Securing the Mediterranean's Water Future		
	H.E. Prof. Hani Sewilam, Minister of Water Resources and Irrigation of Egypt	*Ministry of Water Resources and Irrigation of Egypt*	*Keynote*

Time	Speaker Name & Title	Organization	Role / Topic
12:00	***Panel on Turning Science into Action for Mediterranean Coastal Aquifers***		
	Alice Aureli, Vice-President	*IWRA*	*Moderator*
	Giuseppe Sappa, Professor	*Sapienza University of Rome*	*Panelist*
	Alain Meyssonnier, President	*Mediterranean Water Institute (IME)*	*Panelist*
	Jose Luis Martin-Bordes, Technical Advisor	*UNESCO-IHP*	*Panelist*
12:25	***Panel on Financing and Cooperation for Coastal Aquifers in the Mediterranean***		
	Jose Luis Martin-Bordes, Technical Advisor	*UNESCO-IHP*	*Moderator*
	Paolo Sertoli, Regional Director	*Italian Agency for Development Cooperation (AICS)*	*Panelist*
	Ramiro Martínez, General Coordinator	*Mediterranean Network of Basin Organizations*	*Panelist*
	Lorenzo Galbiati, GEF International Waters Lead	*FAO*	*Panelist*
	Tatjana Hema, Coordinator	*UNEP-MAP*	*Panelist*
12:55	***Conclusions and Way Forward***		

BACKGROUND & RATIONALE

Coastal aquifers are among the world's most strategic freshwater resources, with particular importance in the Mediterranean region. They supply drinking water and support agriculture, industry, and the livelihoods of millions. However, these resources are under increasing environmental and human pressures. Population growth, urbanization, agricultural expansion, and rising industrial demand have intensified challenges to their sustainability. As a result, overexploitation, pollution, seawater intrusion, and ecosystem degradation are becoming widespread, posing serious risks to both human and environmental well-being. These aquifers not only supply freshwater but also sustain wetlands, estuaries, lagoons, and other groundwater-dependent ecosystems that provide invaluable ecological services, from maintaining biodiversity to supporting tourism and local economies. Yet, the absence of effective management frameworks, limited monitoring, and insufficient public awareness have left these resources vulnerable to unchecked exploitation and neglect. Rising sea levels and changing rainfall patterns, driven by climate change, further exacerbate these pressures, increasing the risk of saltwater intrusion and compromising water quality.

Consistent with its mandate to support Member States in the sustainable management of water resources, UNESCO has contributed to the MedProgramme, which is funded by Global Environment Facility (GEF) with the United Nations Environmental Programme (UNEP) being the implementing agency.

The MedProgramme seeks to address major transboundary environmental challenges affecting the Mediterranean Sea and its coastal zones, in line with the objectives and principles of the Barcelona Convention, while strengthening climate resilience and water security and improving the health and livelihoods of coastal populations. Within this broader framework, the coastal aquifer component provides an important connection between land-based groundwater management and the protection of the Mediterranean marine and coastal environment. This connection is particularly relevant to the implementation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-

Based Sources and Activities (LBS Protocol), given that pollutants transported through groundwater and submarine groundwater discharge (SGD) can reach coastal and marine ecosystems. Potential linkages with the MedProgramme's Chemicals and Waste component include improving knowledge of the occurrence and transport of persistent organic pollutants (POPs) and other contaminants through groundwater and SGD pathways.

The main goal of UNESCO's component of the MedProgramme was to increase the resilience to climatic variability and change and strengthen water security of coastal populations in the Mediterranean through the sustainable use of coastal aquifers and groundwater-related coastal ecosystems. It strengthened the technical knowledge base and advanced assessments necessary to support the design and implementation of sustainable management policies and practices in the five coastal aquifers considered of priority importance by the beneficiary countries - Rhiss-Nekkor in Morocco, Ras Jebel in Tunisia, Jifarrah Plain in Libya, Damour in Lebanon and Buna/Bojana shared by Albania and Montenegro – such as the development of Coastal Aquifer Management Plans, building on the increased knowledge on the five priority coastal aquifers, improved monitoring capacity with the installation of groundwater telemetric stations, or the reinforced stakeholder interactions from the national dialogues on conjunctive surface water and groundwater management (CWM).

The component was designed and implemented in coordination with the MedProgramme's wider integrated approaches, recognizing that coastal aquifers cannot be managed in isolation from river basins, coastal zones, marine ecosystems and the socioeconomic activities that depend on them. It therefore established practical linkages with the Source-to-Sea (S2S) approach, the Water–Energy–Food–Ecosystems (WEFE) Nexus, integrated coastal zone management (ICZM), climate-change adaptation and pollution-reduction interventions. These linkages allow groundwater considerations to be incorporated into planning across the full continuum from aquifer recharge areas and river basins to coastal ecosystems and the sea.

At the demonstration-site level, these synergies included opportunities to connect coastal-aquifer management with ICZM and climate-change adaptation processes in Morocco and Montenegro; with ICZM and WEFE Nexus approaches in the Damour area of Lebanon; and with the protection of groundwater-dependent coastal ecosystems, including Farwa Lagoon in Libya. Together, these connections demonstrate the added value of integrating hydrogeological knowledge and groundwater governance into the MedProgramme's broader efforts on pollution prevention, ecosystem protection, climate resilience and sustainable coastal development.

OBJECTIVES

1. **Showcase solutions and lessons learned** from the UNESCO component of the MedProgramme in priority Mediterranean coastal aquifers, highlighting how scientific research and evidence have informed aquifer management plans and supported policy development.
2. **Promote dialogue on conjunctive water management (CWM) and other integrative approaches such as IWRM, ICZM, WEFE Nexus and Source-to-Sea (S2S)** to address challenges such as overexploitation, pollution, degradation of coastal Groundwater Dependent Ecosystems (GDE), freshwater/marine system interactions, (seawater intrusion and Submarine groundwater discharges), and climate change impacts on coastal aquifers.
3. **Strengthen regional cooperation and stakeholder engagement** by sharing experiences on governance, transboundary cooperation, monitoring, and participatory management that support long-term water security and ecosystem resilience in coastal areas.

TARGET AUDIENCE

Policymakers and public authorities; water and coastal-zone managers; hydrogeologists, researchers and technical experts; development and financing partners; regional organizations and civil society.

EXPECTED OUTCOMES

1. **Increased awareness and knowledge exchange** among policymakers, water managers, practitioners, and development partners on effective strategies for protecting and sustainably managing Mediterranean coastal aquifers and related ecosystems.
2. I**dentification of opportunities to scale up and replicate successful approaches** developed through the MedProgramme, including coastal aquifer management plans, monitoring systems and stakeholder dialogue mechanisms, across the Mediterranean region and beyond, while further integrating coastal aquifer management with the WEFE Nexus, Source-to-Sea (S2S) management, implementation of the Barcelona Convention's LBS Protocol, marine protected area (MPA) management, and climate-change adaptation.