



Presentation from  
**2016 World Water  
Week in Stockholm**

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UNESCO-III  
**Coastal aquifers and groundwater**

# **Legal, institutional and policy aspects of coastal aquifer management in the Mediterranean**

**World Water Week  
Stockholm, 1<sup>st</sup> September 2016**

**Matthew Lagod**

Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem

**MedPartnership**



# Overview

1. Legal framework for the protection of the Mediterranean Sea
2. Transboundary environmental concerns
3. MedPartnership
4. UNESCO-IHP assessment of legal and institutional frameworks for groundwater
5. The way forward

# 1. Legal framework

## Barcelona Convention

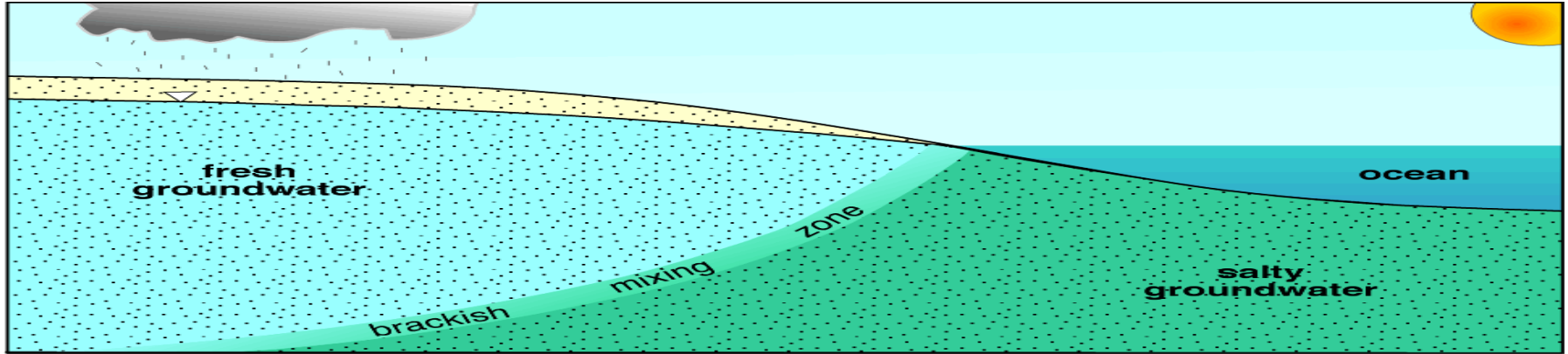
*Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean – 22 Contracting Parties, 7 Protocols*



A legal framework for the protection of the Sea, **applicable to coastal aquifers and groundwater** via the protocols on:

- Land-based sources of pollution
- Specially protected areas and biological diversity
- Integrated coastal zone management

## 2. Transboundary concerns

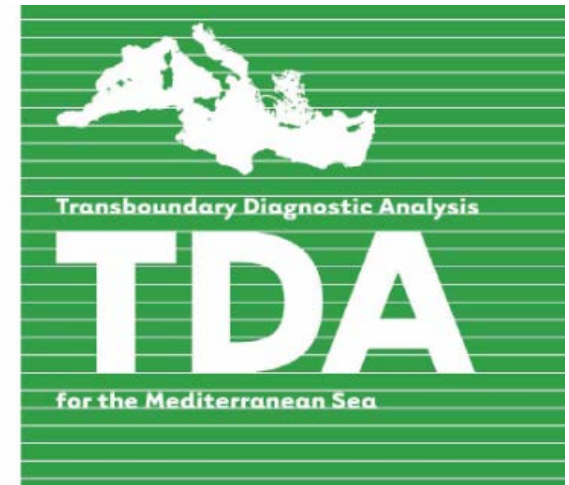


**Coastal aquifers contribute to the integrity and functioning of the coastal zone and marine ecosystems, and their degradation reflects upon, and contributes to the major transboundary issues affecting the Mediterranean Sea**

## 2. Transboundary concerns

### **2005 environmental analysis (TDA-MED) identified major concerns:**

- Decline in biodiversity
- Decline in fisheries
- Decline in seawater quality
- Human health risks
- Loss of groundwater-dependent ecosystems due to contamination, salinization and over-exploitation of coastal aquifers



# 3. MedPartnership

While the 2005 analysis recognized the importance of coastal aquifers in maintaining the health of the Mediterranean Sea – **providing 25% of the freshwater inputs to the Sea** – it did not yield sufficient information on the level of scientific knowledge or governance of groundwater resources.

To fill these knowledge gaps, UNESCO-IHP undertook an evaluation of coastal aquifers and groundwater resources in the context of the GEF MedPartnership Project (2010 – 2015).

# 3. MedPartnership

UNESCO-IHP Sub-component  
**Management of coastal aquifers and groundwater**

## *OBJECTIVES*

- **Reverse trends in over-extraction and degradation of coastal aquifers**  
*(policy interactions, appropriate capacity and technology)*
- **Fill knowledge gaps on coastal aquifers**



## *OUTPUTS*

- **Regional assessments and management recommendations on:**
  - **Legal, institutional and policy aspects of coastal aquifer management**
  - Inventory and characterization of 46 main coastal aquifers
  - Groundwater-related coastal wetlands
- **A coastal aquifer supplement to the TDA-MED and a regional action plan on coastal aquifers**



# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## **Approach**

- Evaluation of legal, institutional and policy aspects of coastal aquifer management in 11 countries
  - Regional report with synthesis and analysis of national frameworks, along with recommendations
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# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## Legal aspects: summary of main findings on present conditions in the Adriatic countries

Legal framework	Adriatic countries			
	Albania	BiH	Croatia	Montenegro
Water ownership	State	State	State	State
Groundwater consideration	Under Water Law(s)	Under Water Law(s)	Under Water Law(s)	Under Water Law(s)
Specific provisions for coastal aquifers	No	No	No	Law on Public Maritime Domain covers submarine springs and near-shore wells
Basin management	Yes	Yes	Yes	Yes
Planning instruments	IWRM	Water management strategy		Water management strategy, ICZM Strategy
Regulations on GW abstractions	Yes	Yes	Yes, except for "general" uses	Yes, except for "general" uses
Regulations on GW quality	Yes	Yes	Yes	Yes
Sanitary protection zones (wells, springs, aquifers)		Yes	Yes	Yes
Ratification of ICZM Protocol	Yes		Yes	Yes

# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## Legal aspects: summary of main findings on present conditions in the Southern and Eastern Mediterranean countries

Legal framework	Southern and eastern Mediterranean countries								
	Algeria	Egypt	Lebanon	Libya	Morocco	Palestine	Syria	Tunisia	Turkey
<b>Water ownership</b>	State	No information	State	State	State	State		State	State
<b>Groundwater consideration</b>	Under Water Law(s)	Under Water Law(s)	Ministerial Decrees	Under Water Law(s)	Under Water Law(s)	Under Water Law(s)		Under Water Law(s)	Law on GW (167/1960)
<b>Specific provisions for coastal aquifers</b>	No	No	No	Prohibition (Decree 791/1982) of any new GW extraction in coastal aquifers	No	No		No	Under GW Law
<b>Basin management</b>	Yes			Yes	Yes				
<b>Planning instruments</b>	Executive Decree		National Water Sector Strategy		National Water Plan				
<b>Regulations on GW abstractions</b>	Yes	Yes***	Yes	Yes	Yes	Yes		Yes	Yes
<b>Regulations on GW water quality</b>		Yes	Yes	Yes	Yes	Yes		Yes	
<b>Sanitary protection zones (wells, springs, aquifers)</b>	Yes				Yes	Yes		Yes	
<b>Ratification of ICZM Protocol</b>		Yes	Yes		Yes	Yes			

# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## Findings and recommendations at the national level

### **POLICY/LEGISLATIVE**

#### *Findings*

- No consideration of coastal aquifers in national policies and legal frameworks
- Lack of awareness of coastal aquifers and their importance

#### *Recommendations*

- Raise awareness among decision makers and about importance of aquifers as water sources in the coastal zone, consider coastal aquifers in all new legislation
- Develop capacity for monitoring of groundwater resources**
- Encourage water conservation measures, through reasonable and equitable water tariffs as well as improved agricultural practices
- Introduce non-conventional water resources (treated wastewater for irrigation, artificial recharge, ...)**
- Consider the effects of climate change on coastal aquifers**
- Introduce modern principles of water management to legislation (sustainable use, pollution prevention, 'user pays', 'polluter pays', ...)
- Enforce existing provisions for groundwater in national legislation
- Fully consider coastal aquifers in all integrated management of coastal zones**

# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## Findings and recommendations at the national level (cont.)

### INSTITUTIONAL

#### *Finding*

-Overlapping responsibilities as well as gaps in responsibilities between ministries in charge of water resources

#### *Recommendations*

- Establish high-level water boards, including all ministries involved in water management, to coordinate actions and agree upon water policies and regulation
- Set up specific entities for coastal aquifers within existing groundwater institutions
- Encourage public-private partnerships to address needs in water resources domain (treatment of wastewater and distribution to farmers, desalinization, ...)
- Encourage stakeholder engagement in the water sector (water governance)

# 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

## **Recommendations at the regional level**

- Encourage countries to ratify the Barcelona Convention's Integrated Coastal Zone Management Protocol
- Promote use of the Integrative Methodological Framework (prepared in the frame of the MedPartnership by GWP-MED, PAP/RAC and UNESCO-IHP) and its consideration of coastal aquifers in the establishment of management plans
- Create a platform to share knowledge on coastal aquifers in the region
- Align future actions in the region with the findings and recommendations in the Coastal Aquifer Supplement to the TDA-MED prepared by UNESCO-IHP

## 4. Assessment of legal, institutional and policy aspects of coastal aquifer management

### Key messages

**No specific laws or policies exist in the vast majority of the countries protecting and regulating the use of coastal groundwater, taking into account its strategic value, its high vulnerability to contamination, and its interactions with the sea. General water laws apply, normally with little or no discrimination between surface and groundwater.**

**The present ICZM Protocol includes very limited consideration of coastal groundwater.**

**This alarming situation calls for the full attention of policy makers at both the national and the regional levels.**

# 5. The way forward

In view of the findings of the assessments undertaken by UNESCO-IHP, the MedPartnership countries have decided to consider the following priority actions:

1. The systematic **mapping of groundwater vulnerability to pollution and salinization in the coastal zone**
2. The identification of major submarine groundwater discharge zones, and assessment of flows and contaminant loads.
3. The design and testing on the ground of **modern multi-purpose monitoring networks**.
4. The consideration of coastal aquifers and groundwater in evolving **water and other relevant legislation and policy instruments**.

UNESCO-IHP intends to pursue these actions with countries in the follow-up project to the MedPartnership, scheduled to begin in 2018.



Thank you for your attention!

[m.lagod@unesco.org](mailto:m.lagod@unesco.org)