

***Importance of considering coastal
aquifers as part of the source to sea
continuum:***

example from the Medpartnership project

*The salty dimension of water governance – the link
between upstream management and downstream impacts*

*World Water Congress XV
Edinburgh Wednesday 27 May 2015*

Outline

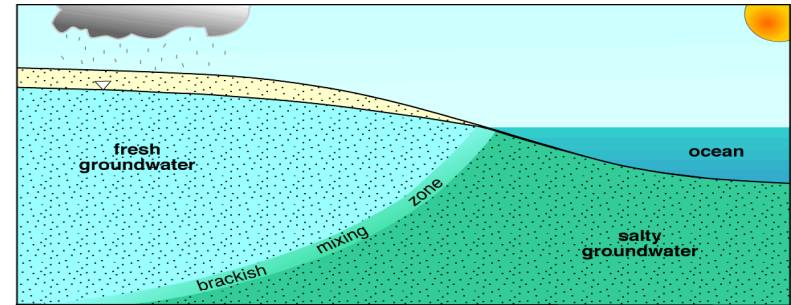
- Importance of coastal aquifers
- The Medpartnership project



Coastal aquifers are at the nexus of the marine and freshwater ecosystems

They represent a water source for the millions living in coastal regions → *Drinking water, irrigation, tourism, industry*

They sustain important ecosystems (wetlands) which provide services



Interactions with the sea

Two kinds:

- Submarine groundwater discharges (SGD):
→ significant influence on the environmental conditions of many near shore marine environments:

***In the Mediterranean :SGD → 25%
of total freshwater inputs to the Sea***

***Coastal aquifers are critical to water
balance and good seawater quality***

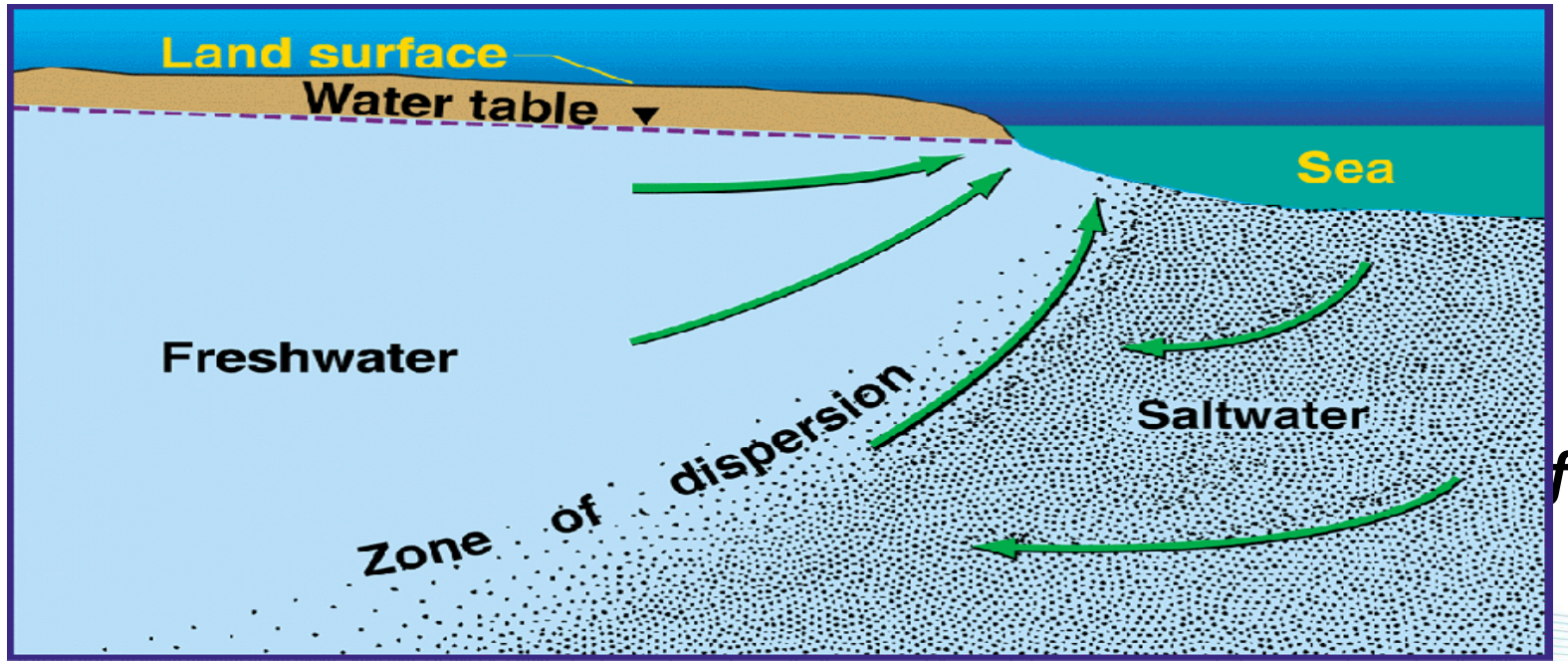


Interactions with the sea

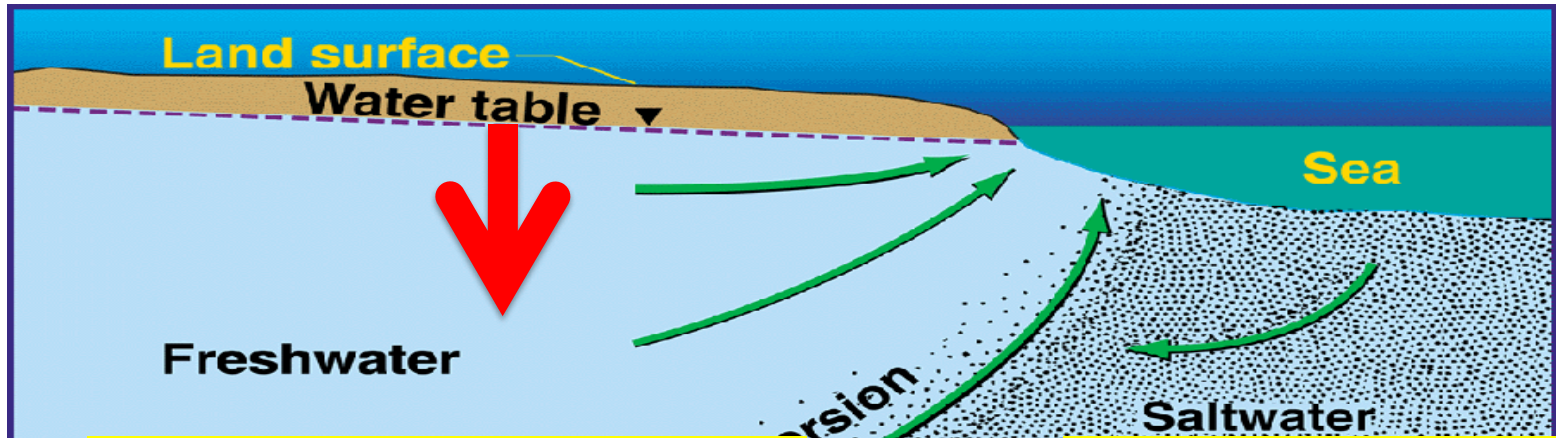
- Seawater intrusion:
 - movement of seawater into fresh water aquifers due to natural processes or human activities.
 - caused by decreases in groundwater levels or by rises in seawater levels.
 - Intrusion affects the quality of water and the health of groundwater dependent ecosystems.



Interactions between groundwater and the marine environment



Interactions between groundwater and the marine environment



Pesticides
Fertilizers
Untreated WW

Salt water
intrusion



The Medpartnership

GEF/UNEP-MAP Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem

Collective effort of:

- Regional, international, non governmental organizations
- Countries sharing the Mediterranean Sea (13)



Objective:

The protection of the marine and coastal environment of the Mediterranean

MedPartnership components:

1

Integrated approaches for SAPs and NAPs: ICZM, IWRM, coastal aquifers

2

Strategic Action Program

Land-based activities

3

Strategic Action Program

Marine and coastal biodiversity

4

Coordination, NGO, replication, communication

The Medpartnership

For the first time coastal aquifers are:

- **considered an important element of the environmental continuum “basin – coastal zone – continental shelf”,**
- **integrated and analyzed in the context of a project and an environmental diagnostic of a marine ecosystem.**





OUTPUTS

1. A coastal aquifer supplement to the TDA-MED and a regional action plan on coastal aquifers

2. Regional assessments and management recommendations on:

- Legal, institutional and policy aspects of coastal aquifer management
- Risk and uncertainty related to coastal aquifer management, including characterization of 46 coastal aquifers
- Groundwater-related coastal wetlands, including characterization and mapping of 26 coastal wetlands

3. Case studies

- Aquifer vulnerability mapping (3)
- Integration of coastal aquifers and groundwater in ICZM and IWRM plans (2)
- Hydrogeochemistry as a tool for tracing groundwater pollution sources (1)
- The role of groundwater in sustaining coastal ecosystems (1)

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

Thank you for your attention