



الكلية متعددة التخصصات الناظور
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Faculté Pluridisciplinaire de Nador



The Marchica Lagoon of Nador (Morocco), towards a sustainable development.

November 17, 2025

Teatro Piccolo Arsenale, Venezia

*Pr. Mímoun
AAΛAOU*

2008

Present

Early 20th century

Development work carried out so far



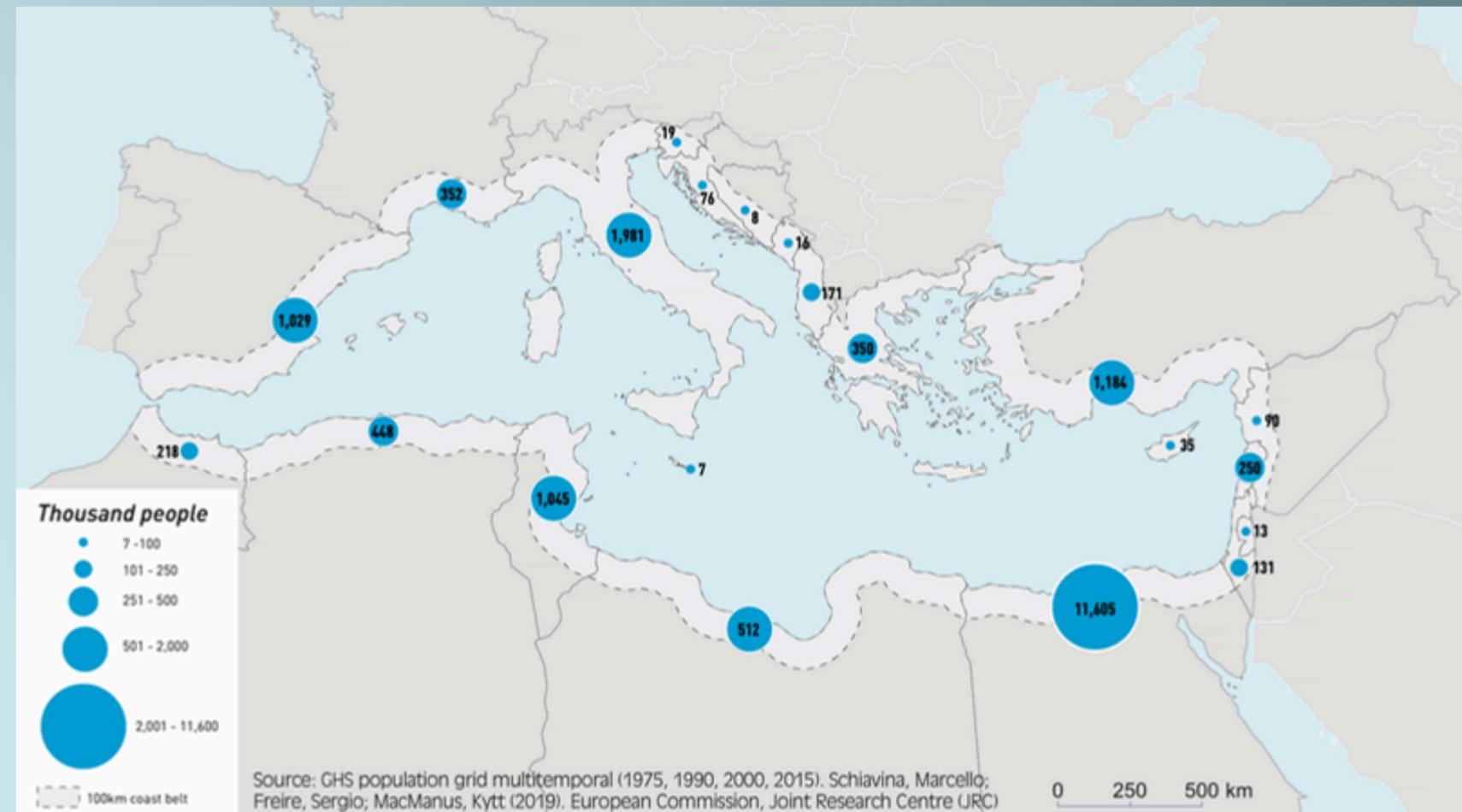
Tasks to be completed & Recommendations

The first urban center appears

**Creation
MarchicaMed
Marchica agency**

Introduction

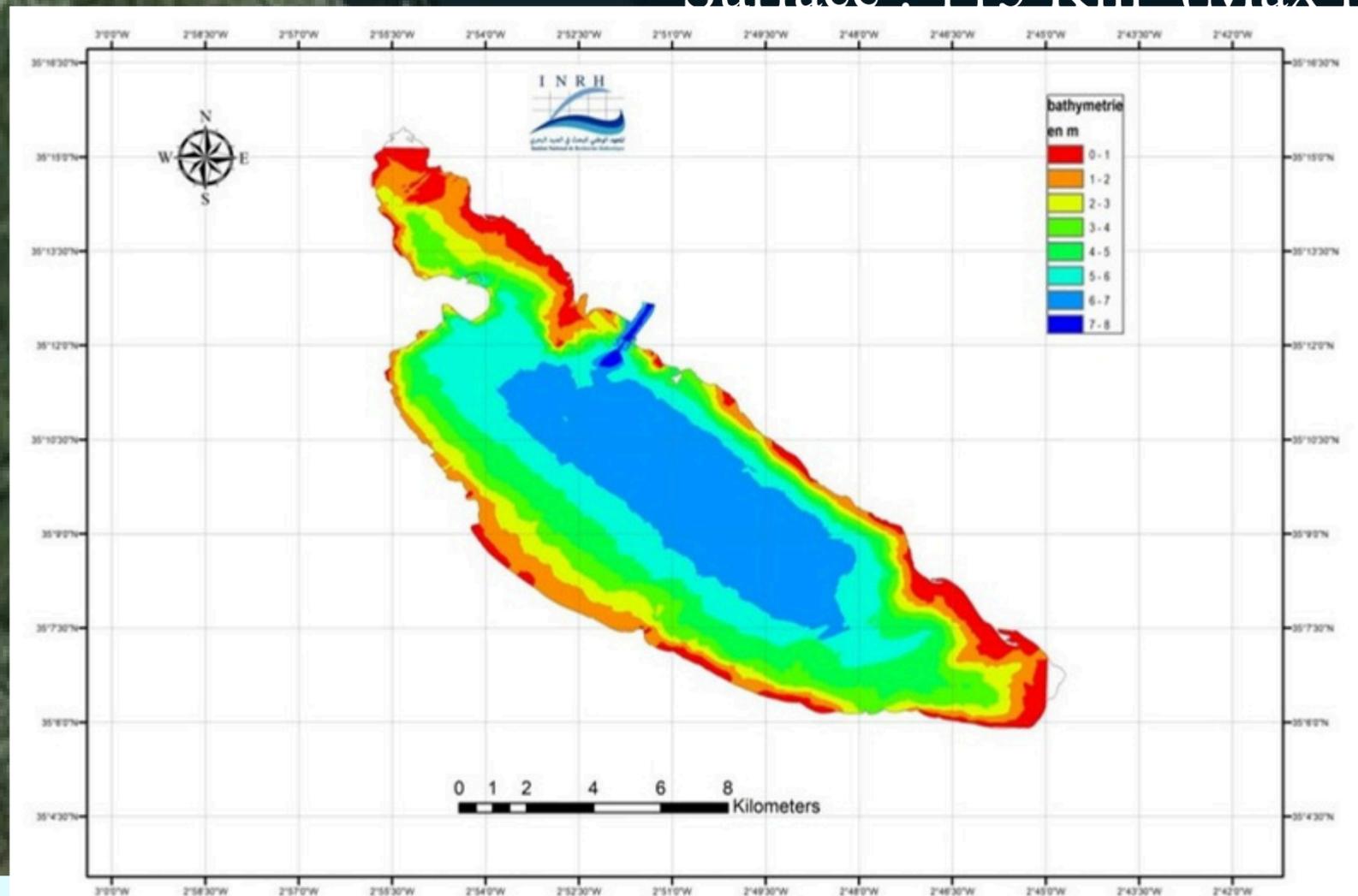
- More than half of the world's population lives within 100 km of the coast.
- 1/3 of Mediterranean population
- Marine and coastal environments are essential ecosystems for biodiversity and human well-being
- Faced with threats such as pollution and urbanization, (ICZM) has become imperative. Morocco has ratified the Mediterranean ICZM (the transition to Integrated Coastal Zone Management) Protocol, which requires the development of regional and national plans to reconcile economic and social dimensions with environmental protection.





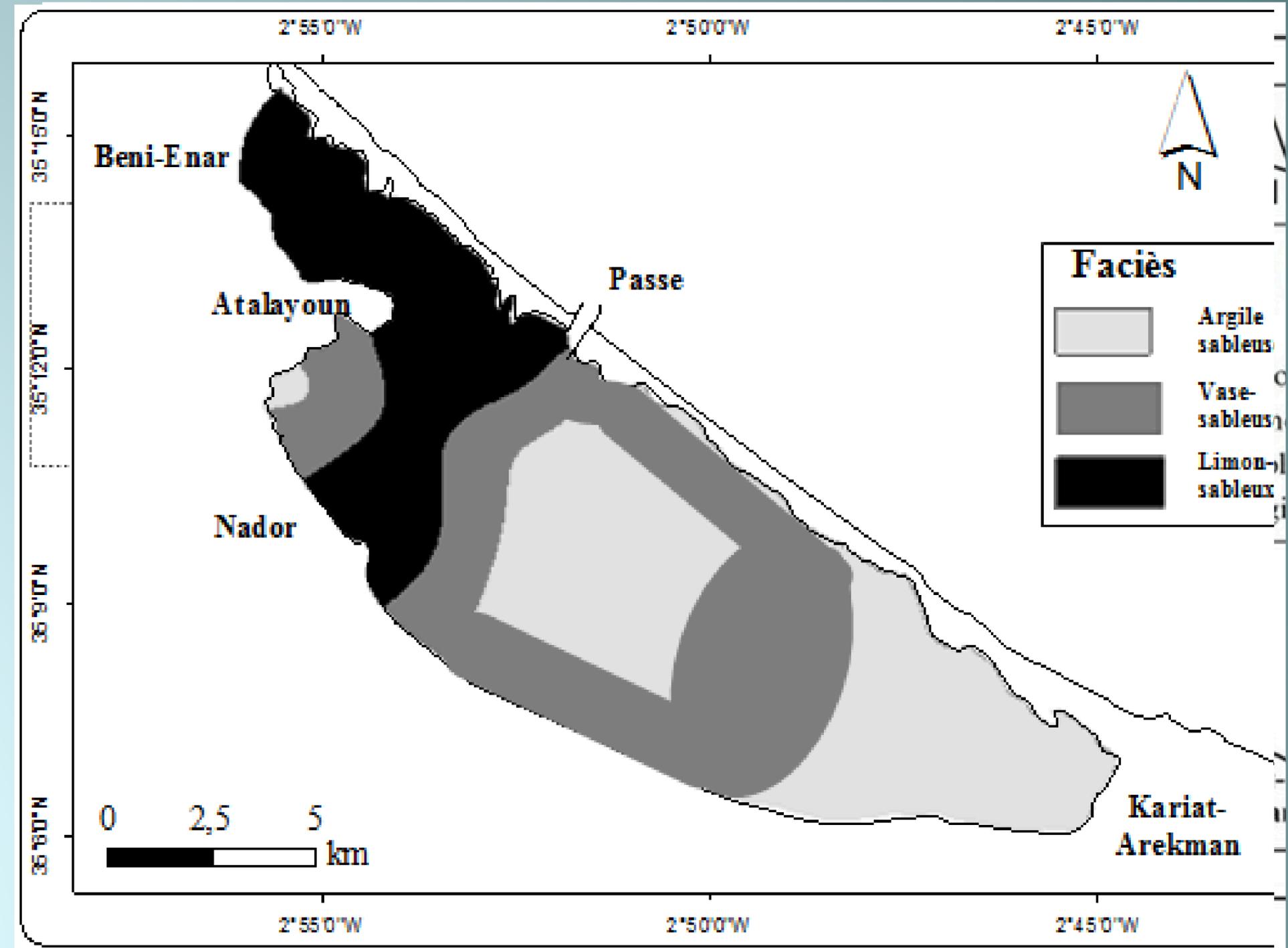
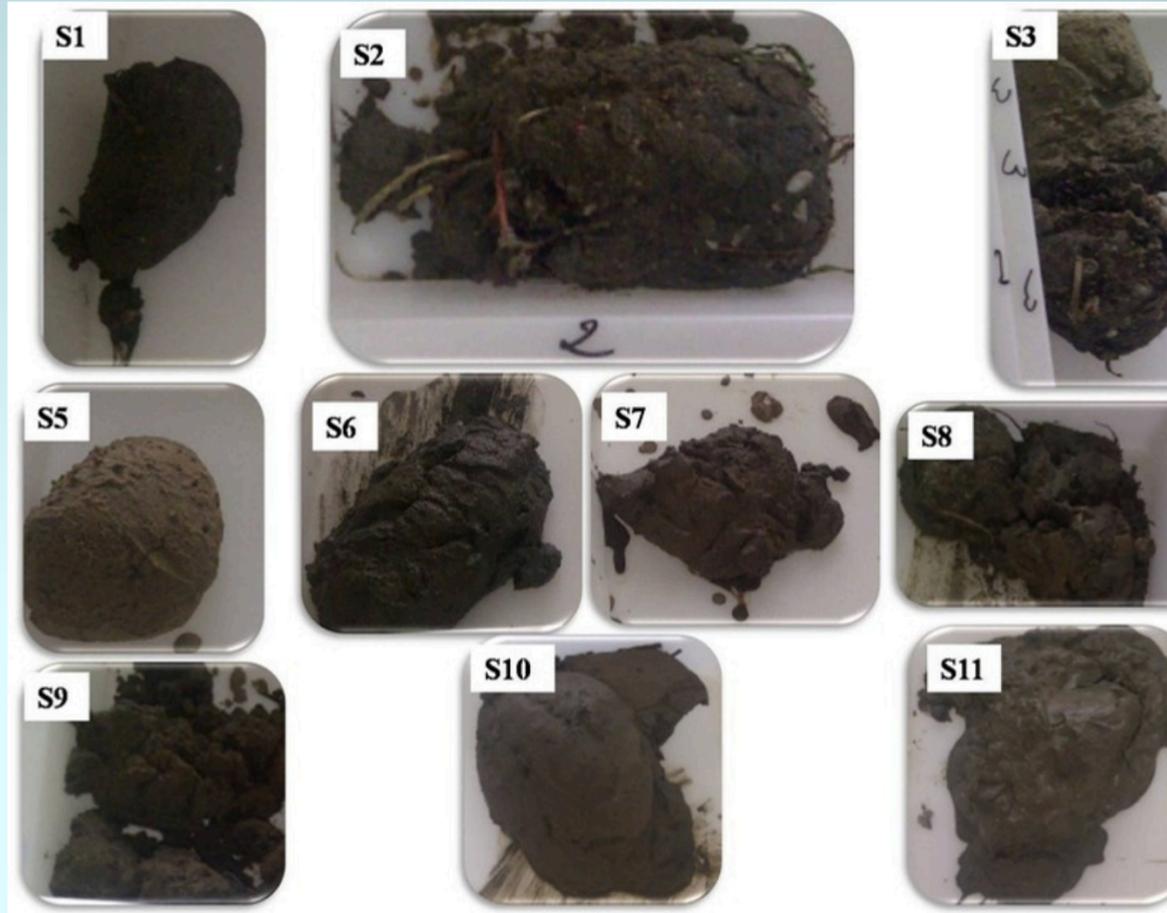
General data:

- Located in northeastern Morocco, it is the second largest lagoon in the southern Mediterranean.
- Site classified in RAMSAR sites since 2005
- Classified as SIBE (Site of Biological and Ecological Interest)
- Surrounded by 4 municipalities, about 260.000 inhabitants
- Launch of 7 projects since 2008
- It receives fine sediments: sand, silt, and clay
- Surface : 115 Km² (Max length: 25km, Max width: 7,5km, Max depth 8m)



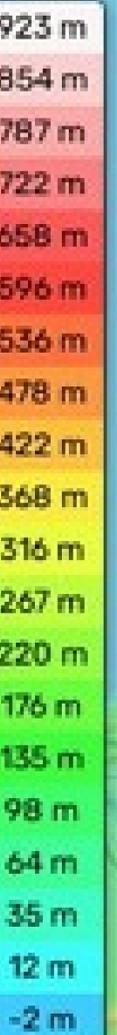
Cap de l'eau

- Particle size distribution



%	Argile	Limon fins	Limon grossier	Sable totals
Max	15	20	60,4	77,7
Min	0	0	14,8	12,35

the various constraints that interact on the lagoon

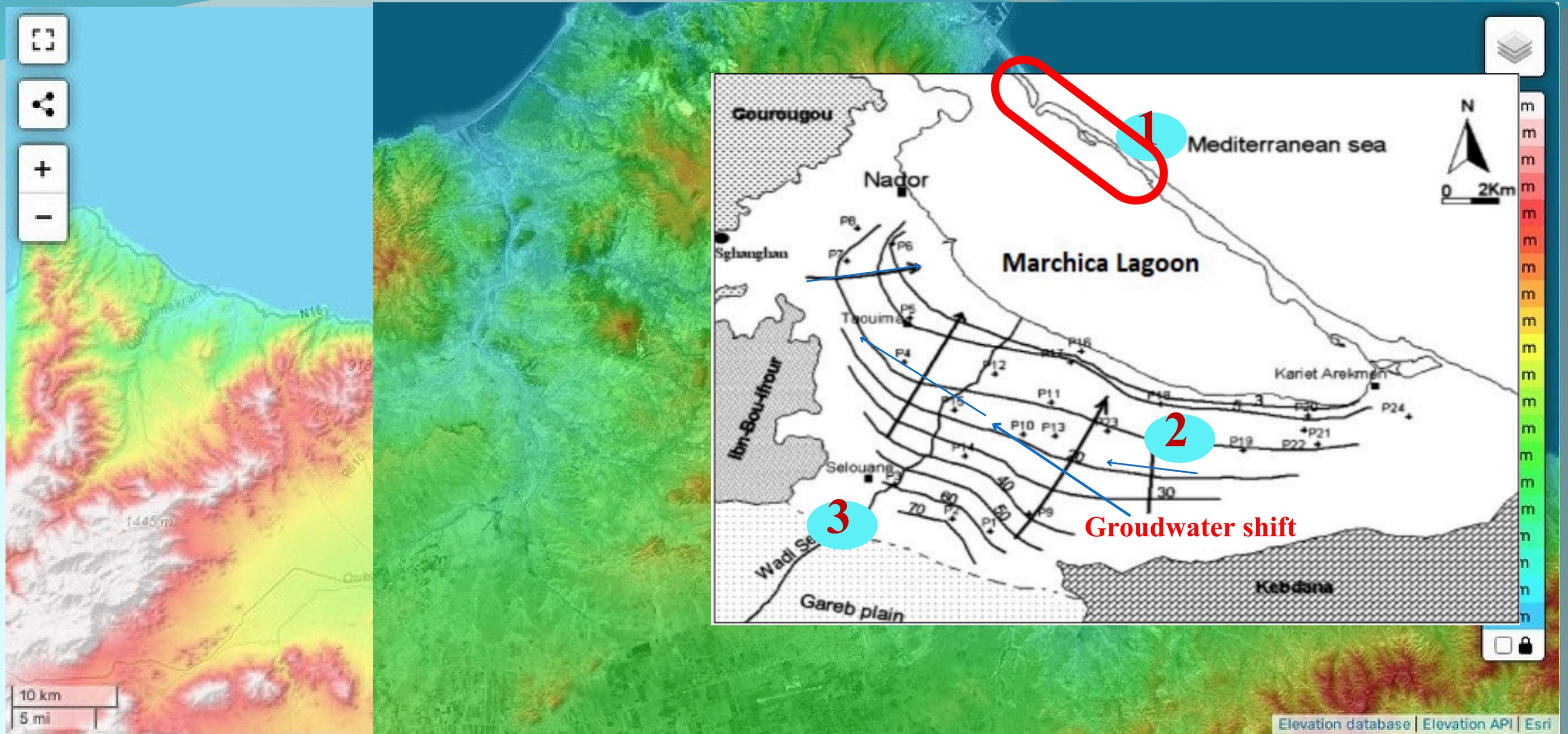


10 km
5 mi

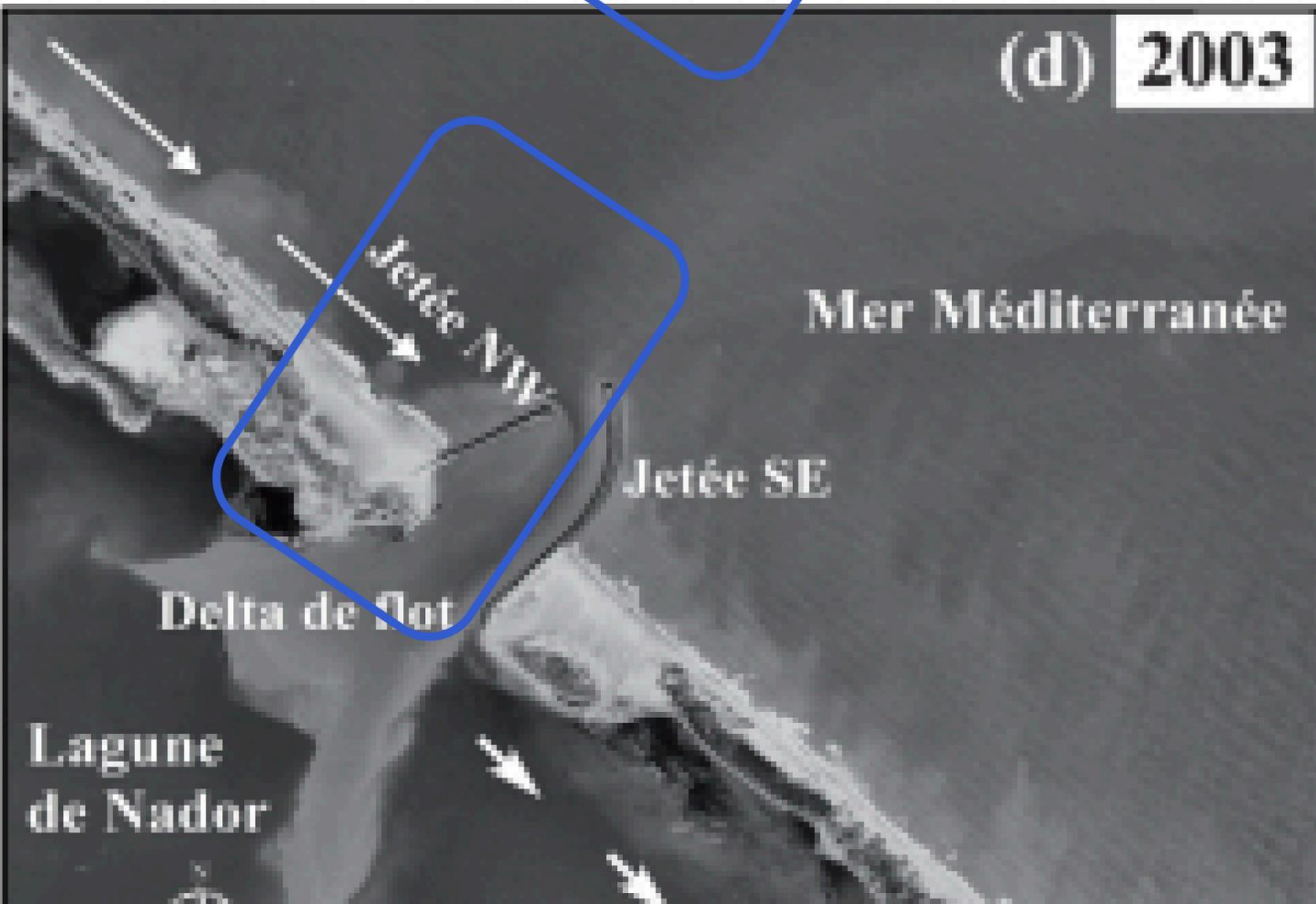
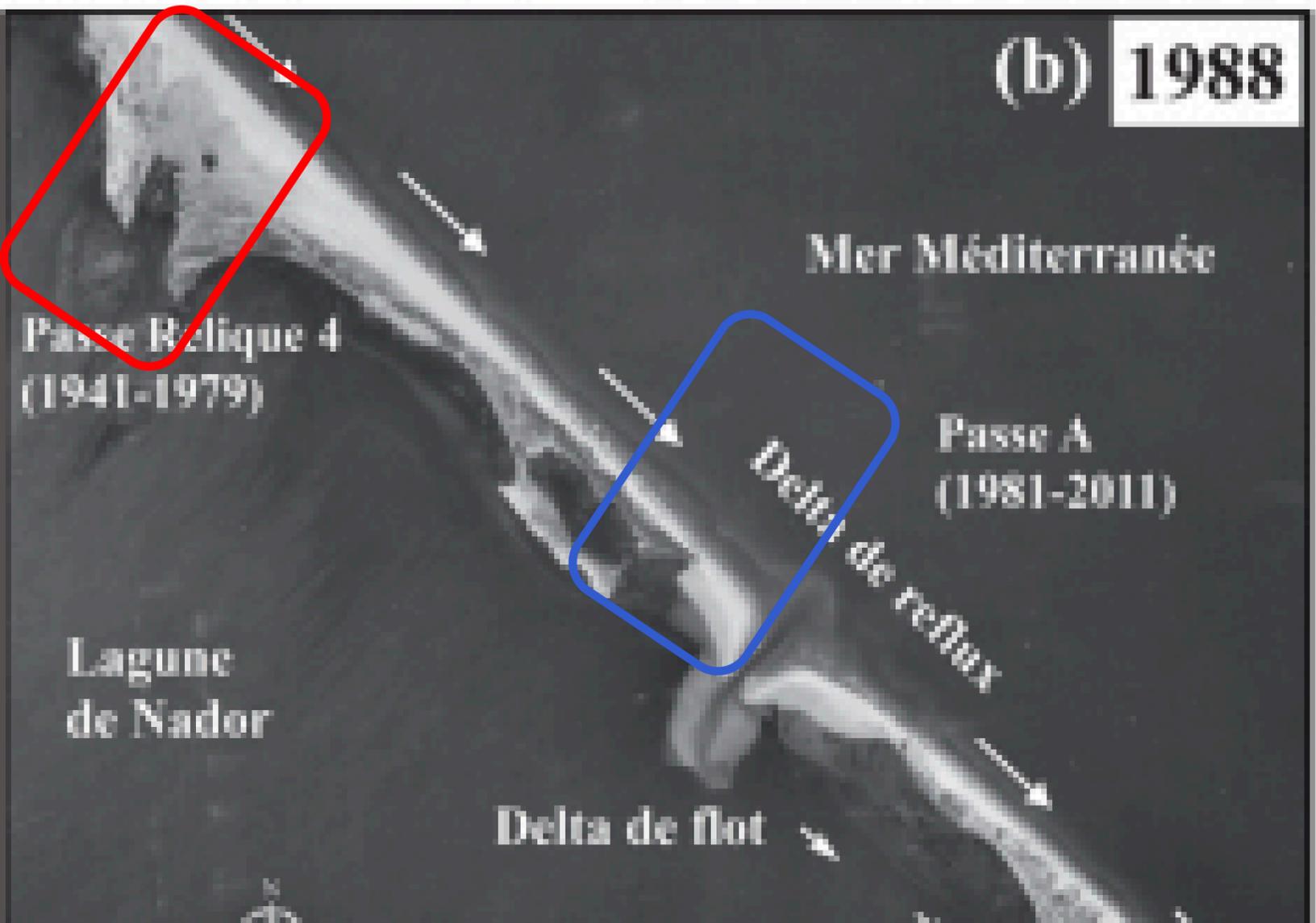
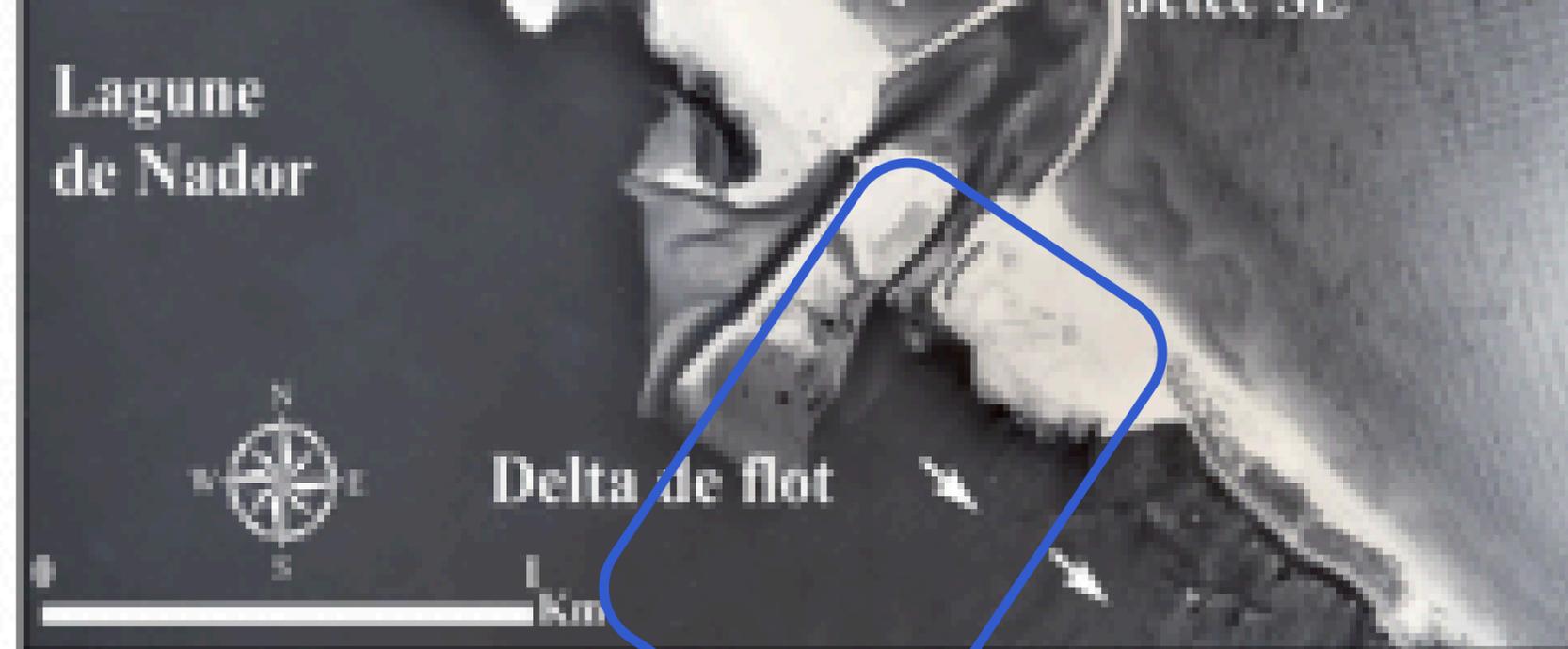
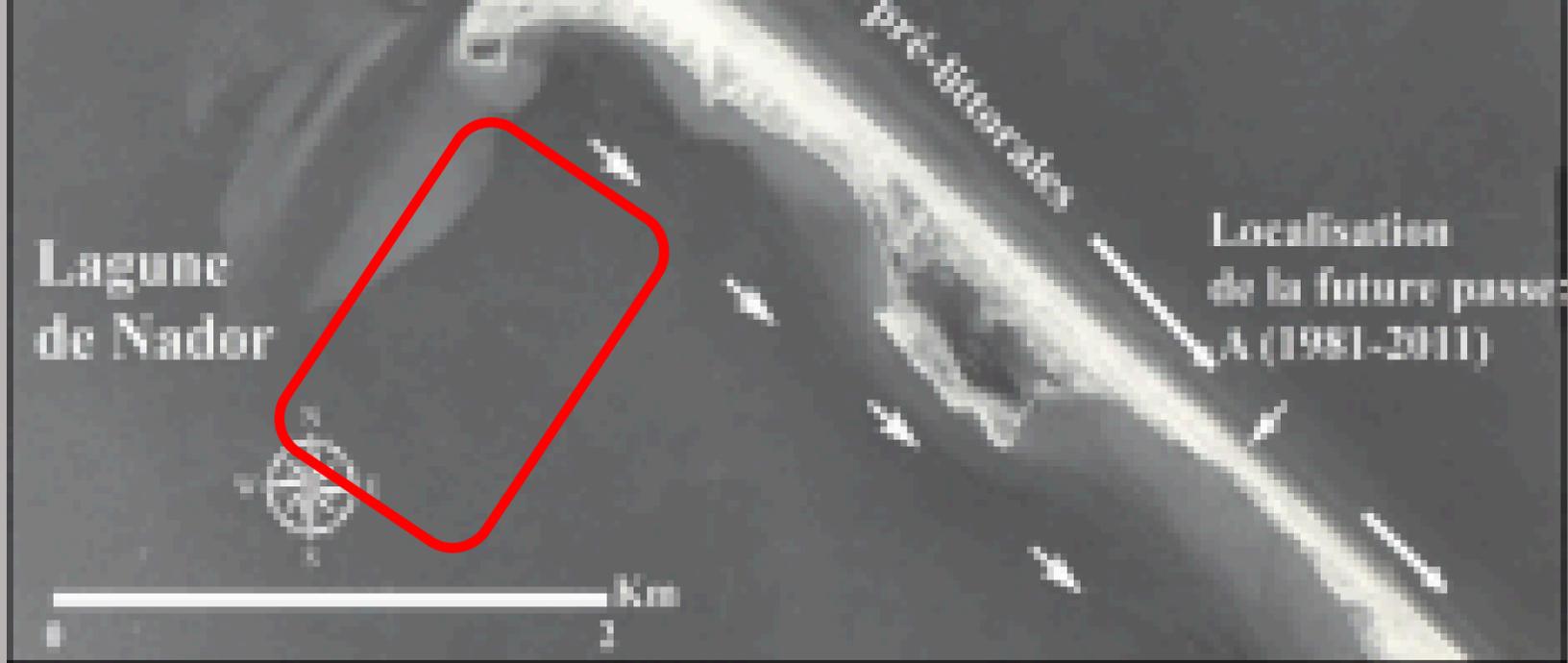


10 km
5 mi

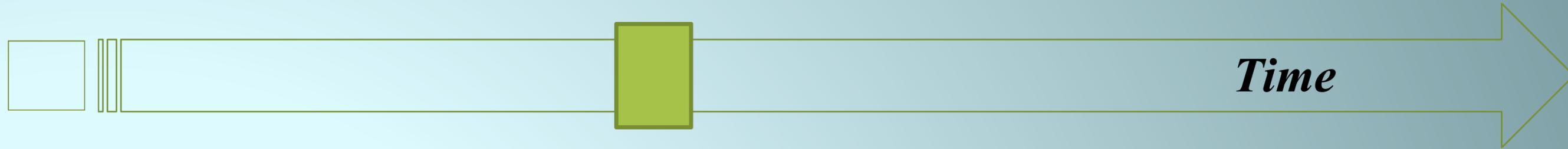




The hydrological regime : influenced by Mediterranean inputs, groundwater, and continental waters.



2008



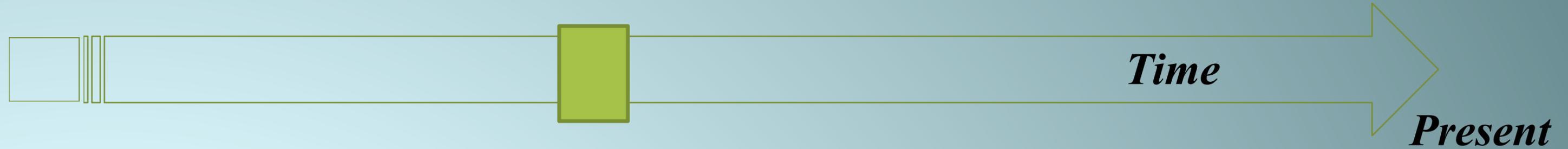
**Creation :
MarchicaMed
Marchica agency**

The launch of the major development project of Marchica by the king of Morocco on 2008





Development work carried out so far



- *Upstream of the Marchica lagoon*

- *Waste collection and sorting at special place*
- *New Sewage treatment plant of Big Nador*
- *A new controlled Landfill...*



- *Downstream (in the lagoon and around it)*

- *Pollution cleanup work of the Lagoon*
- *Installation of Biohuts and artificial reef*



Nador lagoon



New pass



City of two seas



Atalayoun

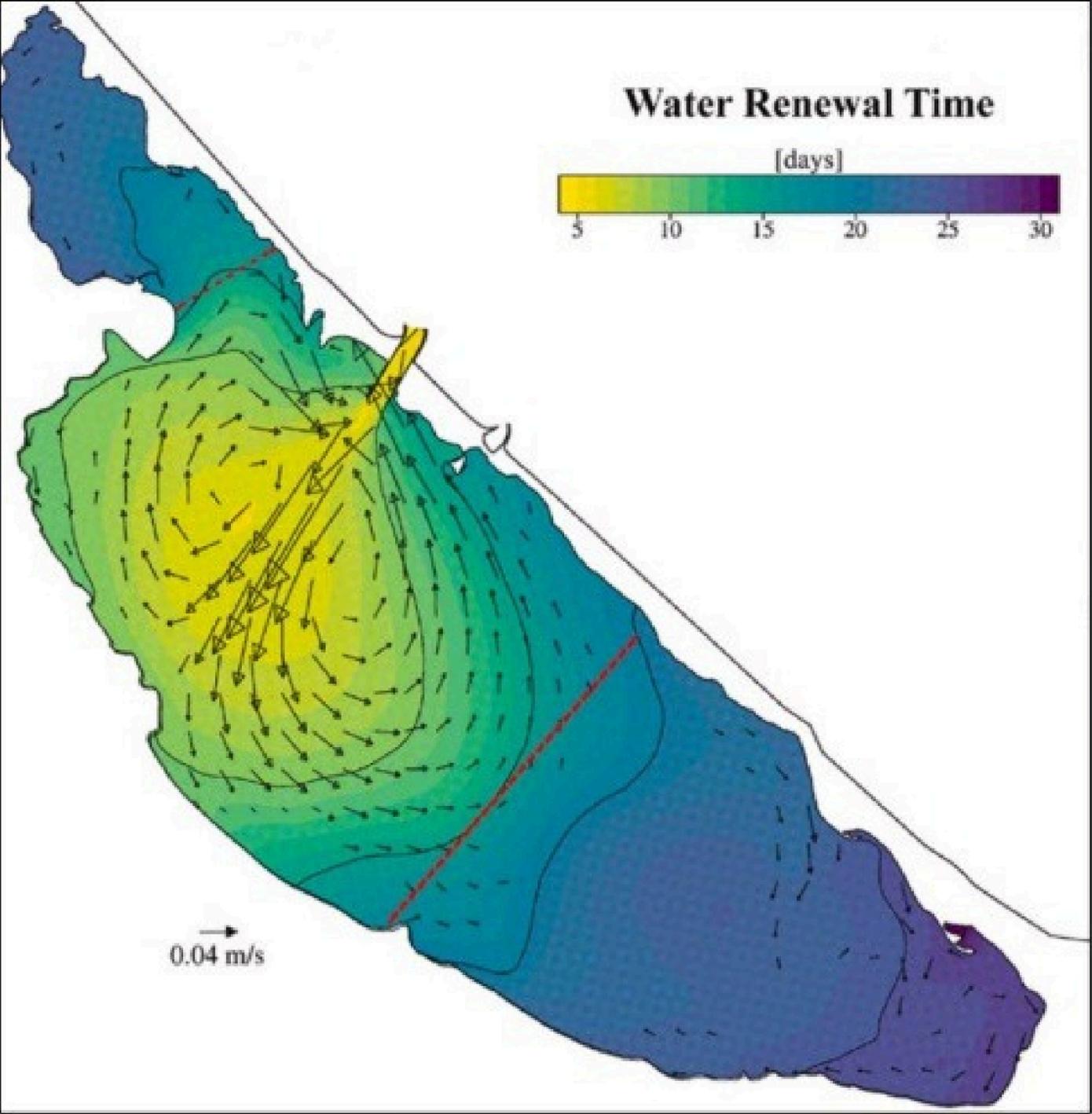


Ornithological park

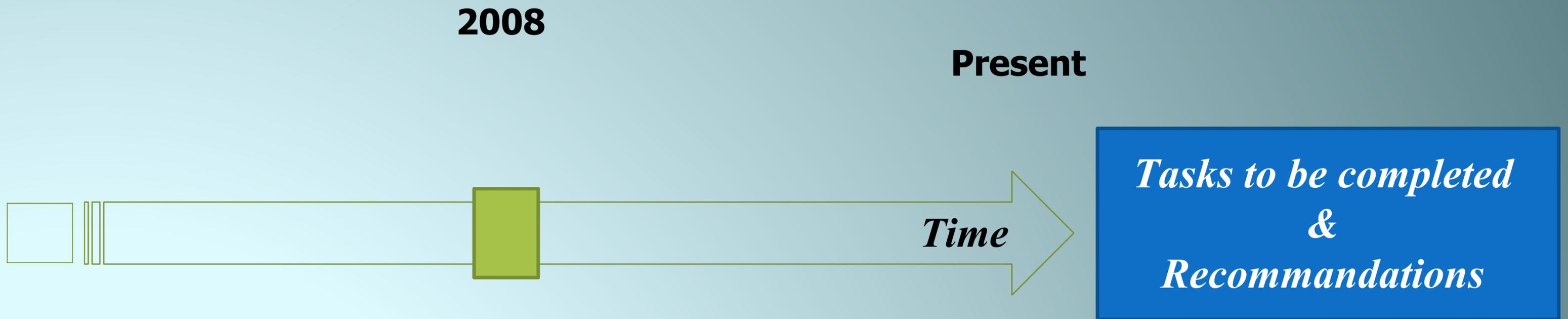


New Nador





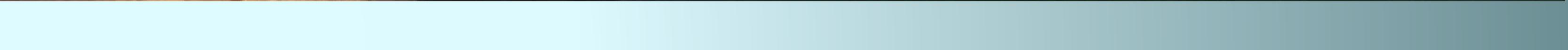


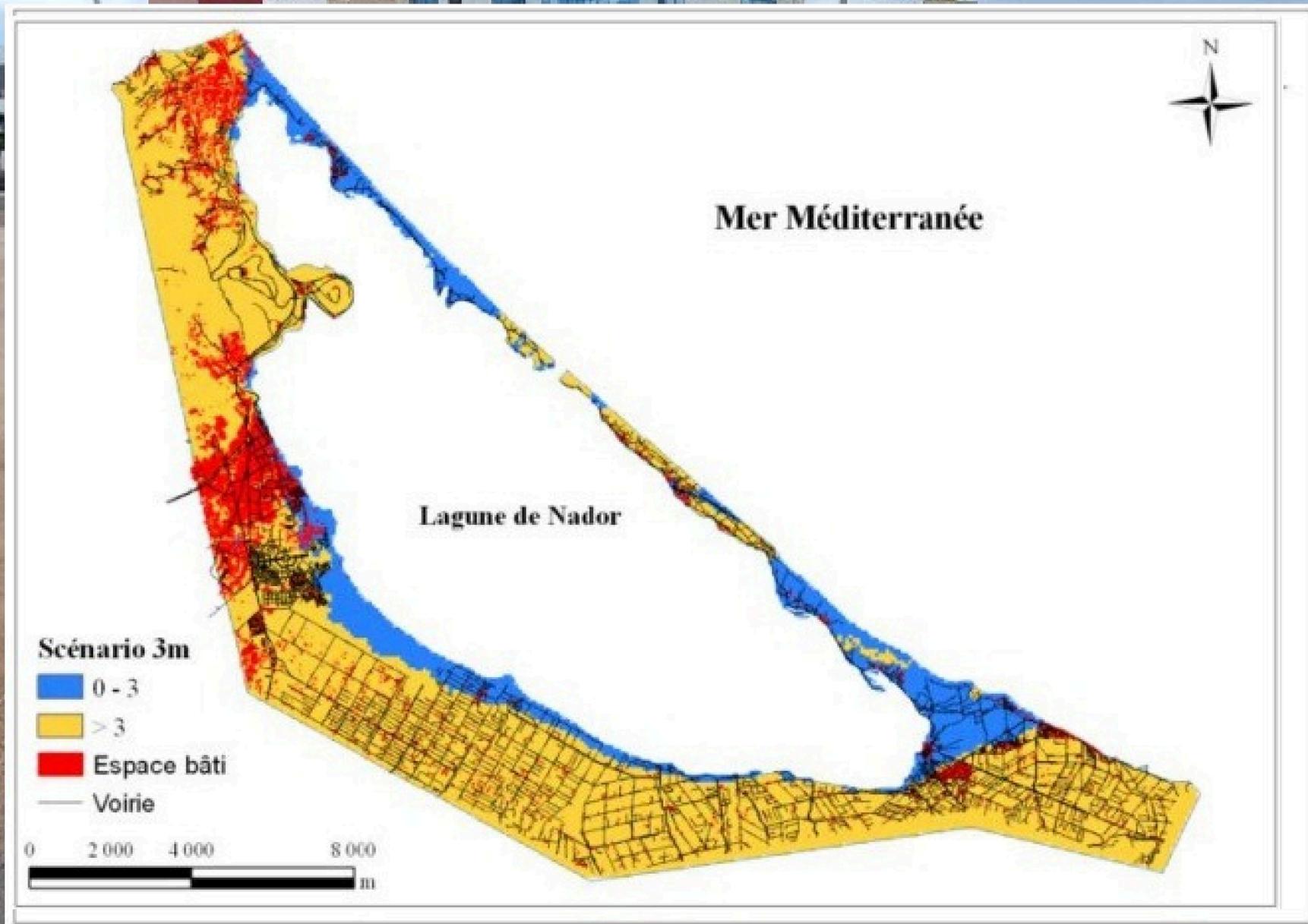


Despite all the efforts made, the environmental challenges remain significant and require continuous and coordinated work among the various stakeholders on site



Water eutrophication

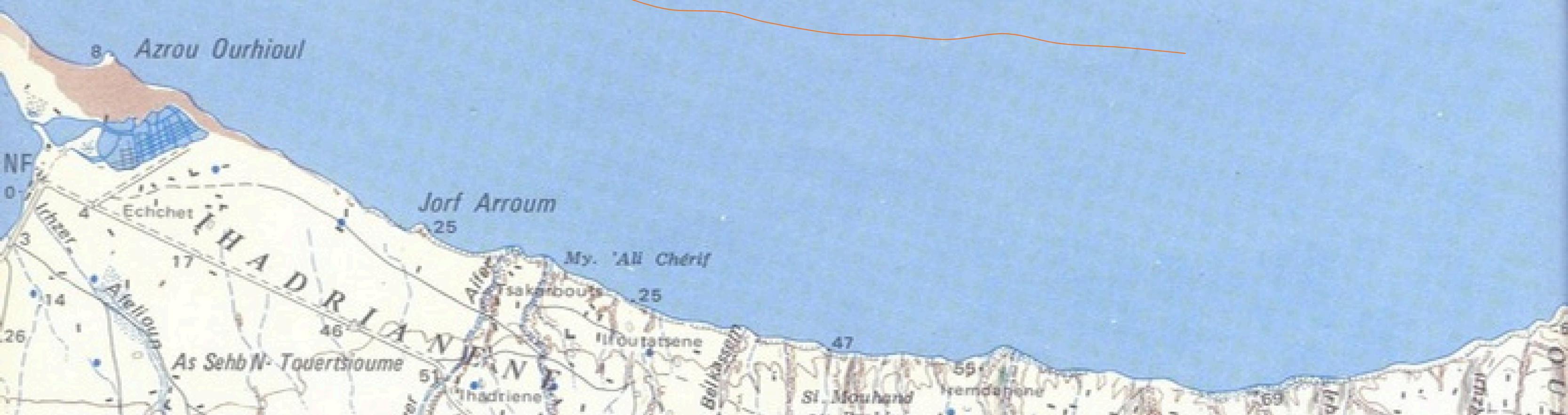


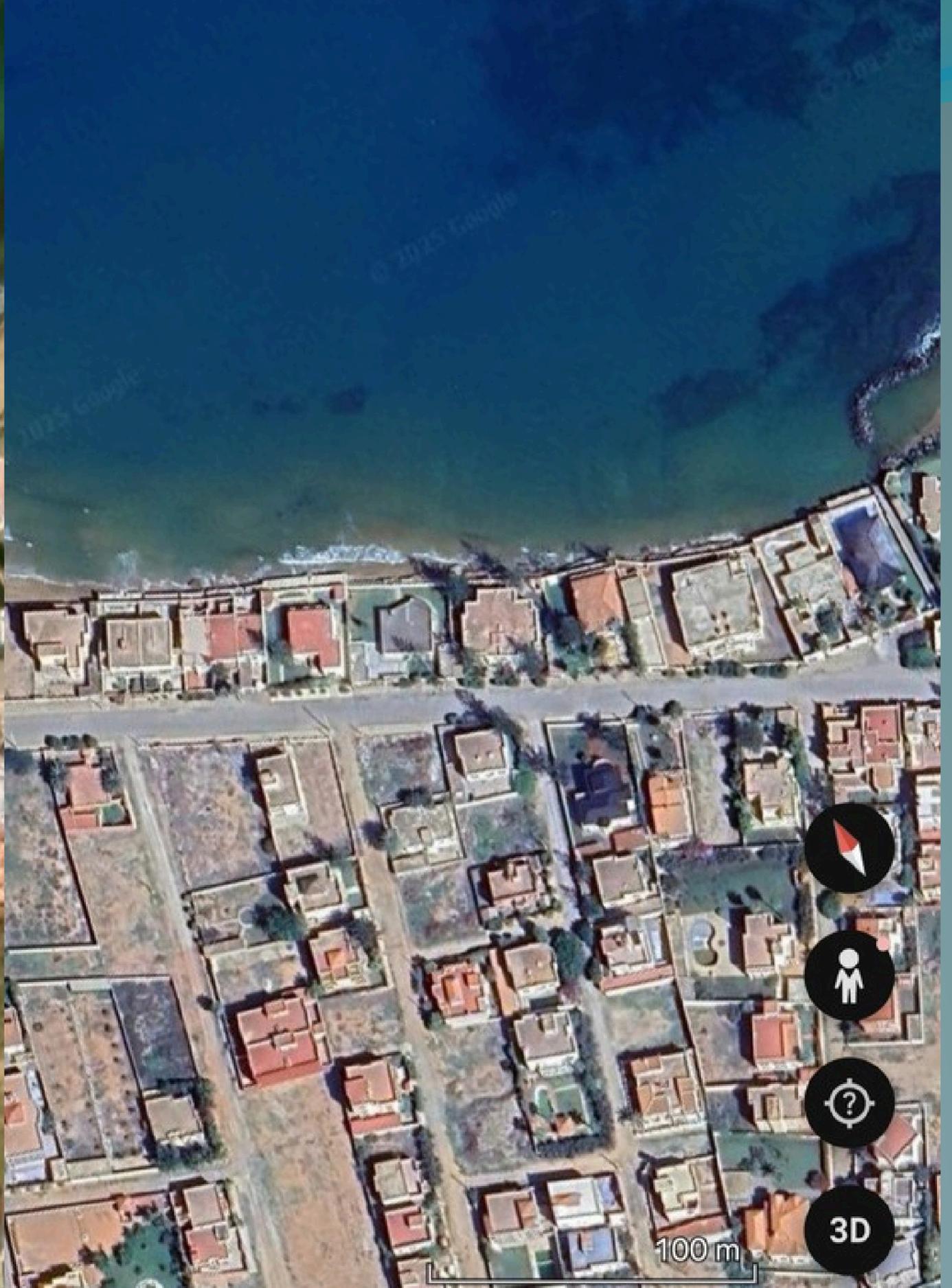
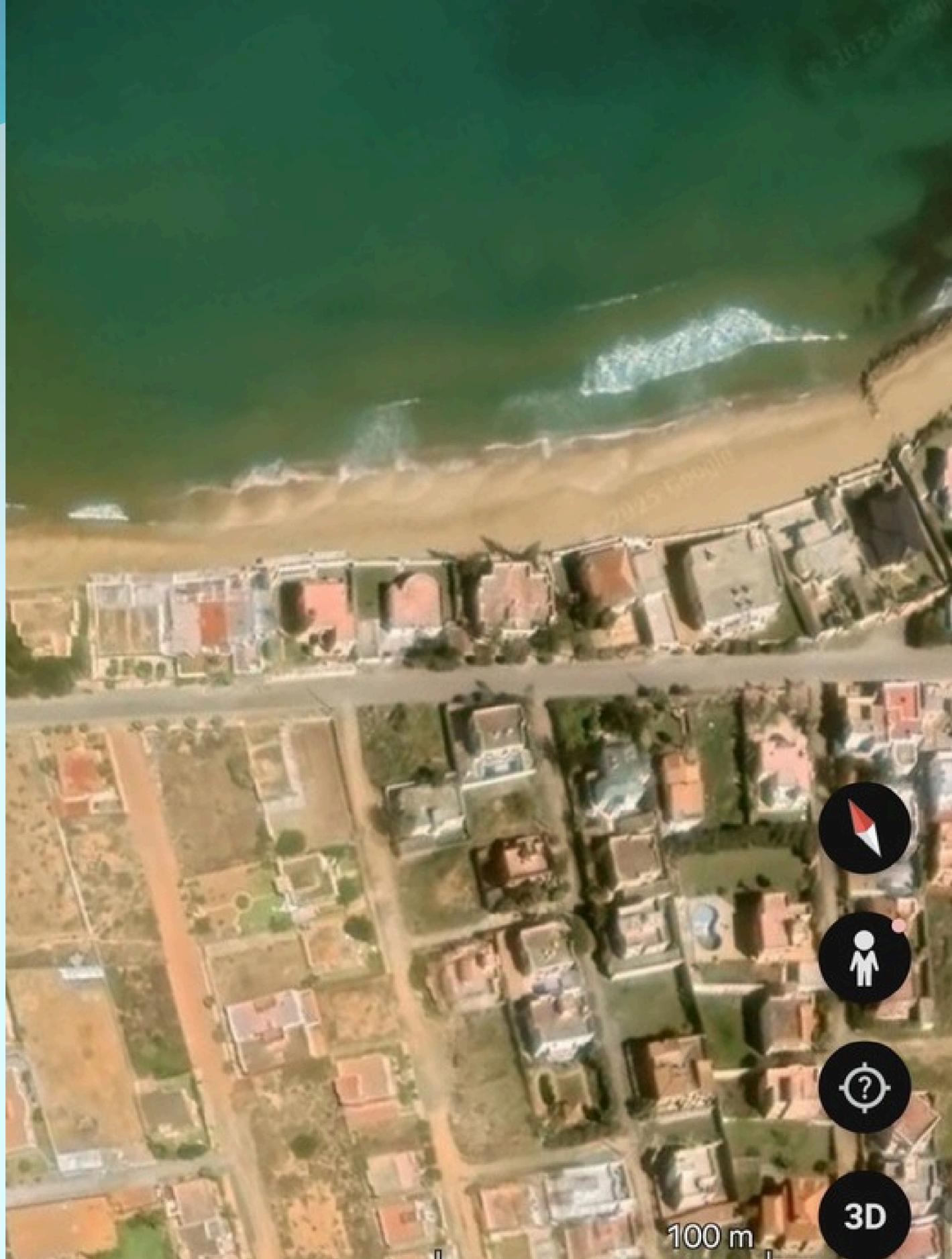




Marchica Lagoon

ARKMAN

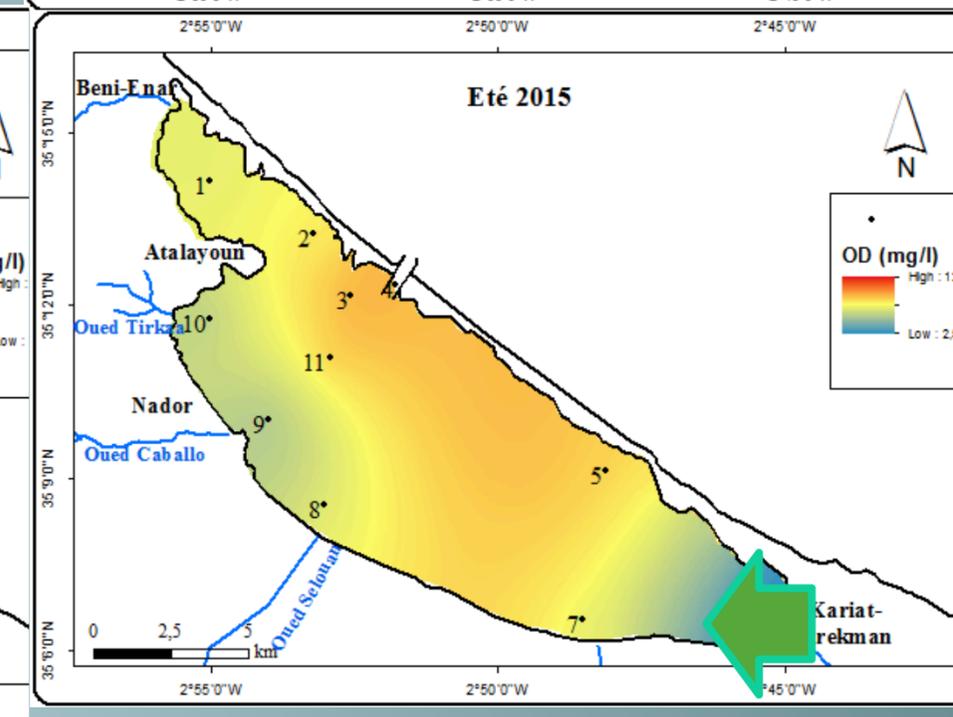
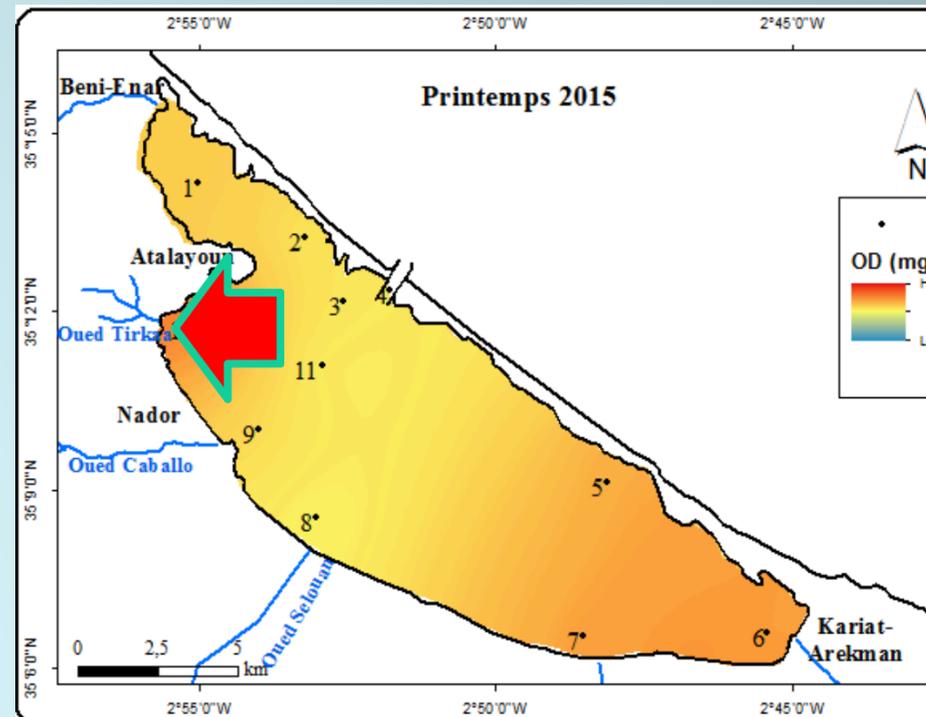
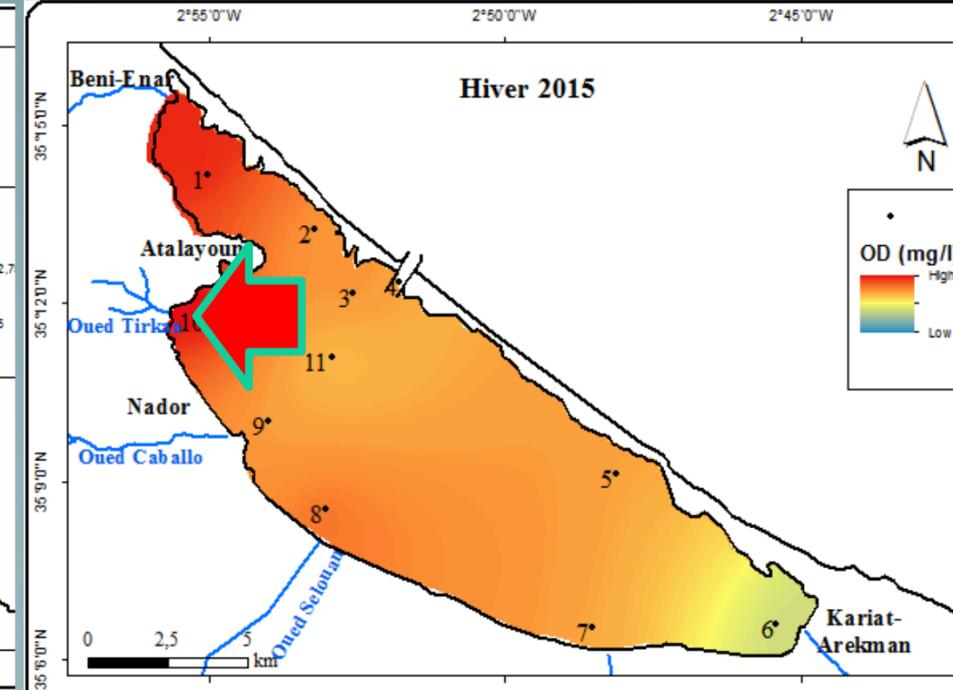
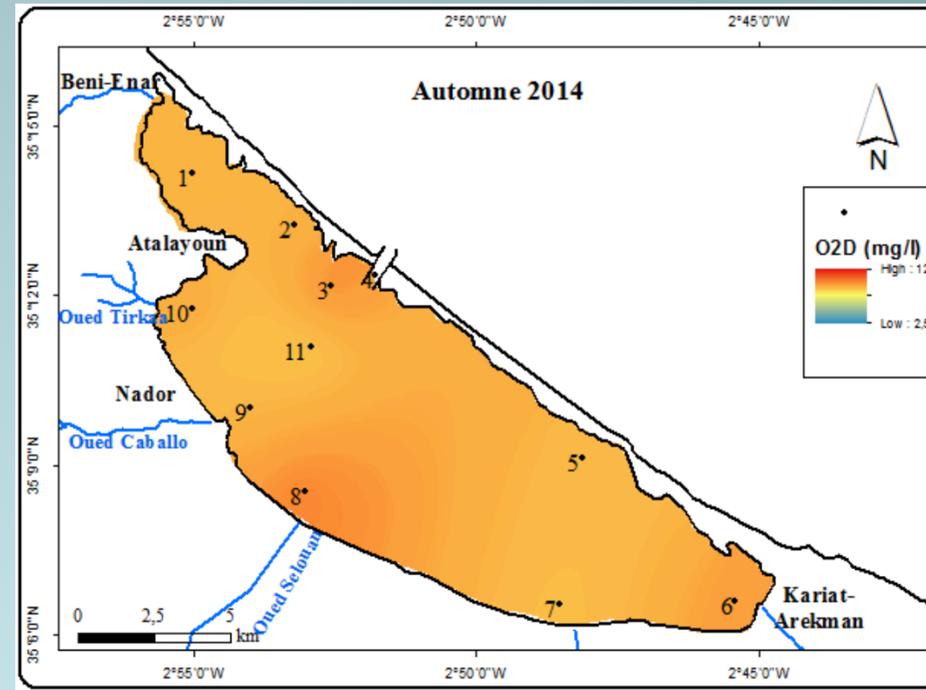






- Dissolved Oxygen**

O2.D mg/l	Automne 2014	Hiver 2015	Printemps 2015	Eté 2015
Max	10,3	12.75	10,35	9,02
Min	9	6.49	7.8	2,5
Moy.	9.38	9.95	8.81	7,10





Invasive species

Sea hares



The blue crab: *Callinectes sapidus*



Invasive species

Posidonia oceanica, Native algae

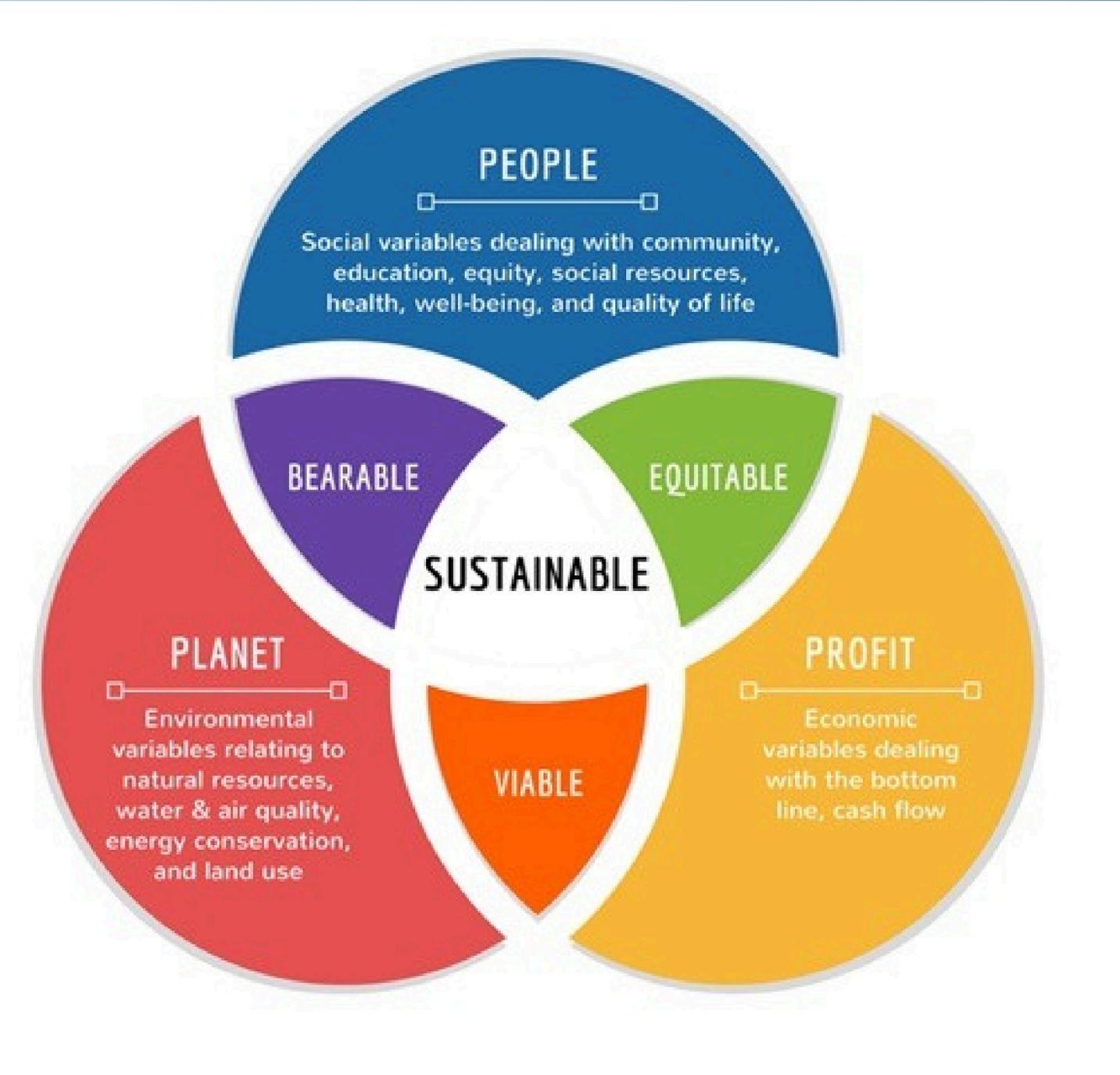


Caulerpa prolifera, Invasive algae



Specific objectives

- **Implement a scientific and participatory strategy for the sustainable management of linking the Marchica lagoon to the Mediterranean Sea and other ecosystems**
- **Identify and map different habitats and marine recruitment areas;**
- **Model the ecological connectivity between lagoon and sea;**
- **Integrate environmental and contamination data to assess nursery quality;**
- **Identify priority areas for conservation and restoration;**
- **Strengthening territorial governance through decision-making tools.**
- **A civil society engagement!**
- **Education & awareness (from the school to university...)**



Thank you!

