



General Fisheries Commission for the Mediterranean
Commission Générale des Pêches pour la Méditerranée



LaMed-2 Project

Spanish report

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Meeting on

Mediterranean coastal lagoons management: interaction
between aquaculture and capture fisheries

Cagliari, Italy, 28-30 June 2011



Key topics

Lagoons areas

Atlantic

Mediterranean

Aquaculture and fishery
shellfish

Integration

Compatibility

high environmental value

Protection

Management

Geographical distribution of lagoons in Spain



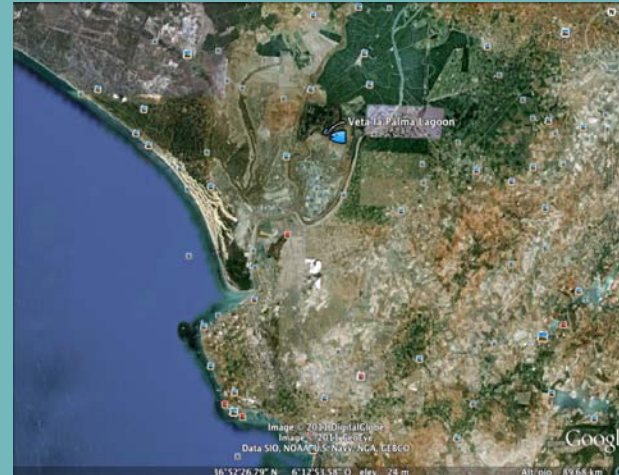
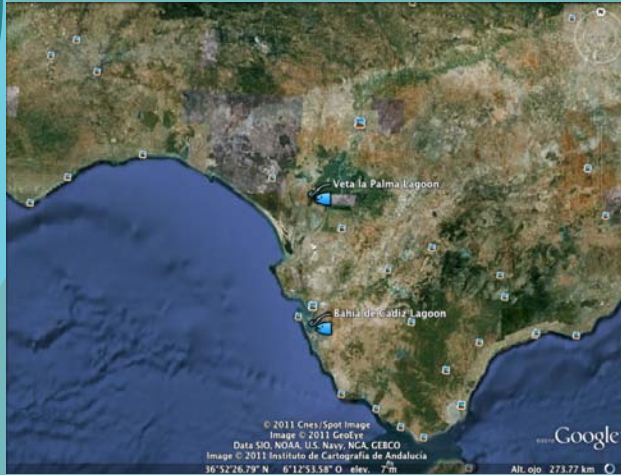


General Data of lagoons in Spain.

SUBREGION	NAME OF LAGOON	LOCATION		SURFACE	Typology
		Site	Cord.		
South-Atlantic Coast	VETA LA PALMA	Seville	37° 0'23.81"N 6°12'20.41"W	11.300 ha	estuarine lagoon
	BAHÍA DE CADIZ	Cadiz	36°26'38.35"N 6°10'20.34"W	10.522 ha	Intertidal lagoon
South-Mediterranean Coast	MAR MENOR	Cartagena	7°42'43.82"N 0°47'21.36"W	1,82 ha	Hypersaline Coastal lagoon
	ALBUFERA DE VALENCIA	Valencia	39°19'57.50"N 0°21'7.78"W	21.120 ha	"Albufera"
	ALBUFERA DE MALLORCA	Majorca	39°47'6.97"N 3° 6'0.59"E	2.580 ha	"Albufera"
	DELTA DEL EBRO	l'Encanyissada	Tarragona	40°38'46.95"N 0°39'41.52"E	1.192 ha
Calaixos de Buda		40°41'53.50"N 0°51'19.03"E		507,09 ha	



“Veta la Palma” lagoon. Seville-Andalusia.



The Veta la Palma lagoon with more than 10.000 hectares, and is an ecosystem of high ecological value mainly linked to the Guadalquivir river and where they develop in a compatible way activities such as agriculture, livestock, fisheries and aquaculture, while maintaining natural conditions suitable for nesting and the presence of a large community of birds.



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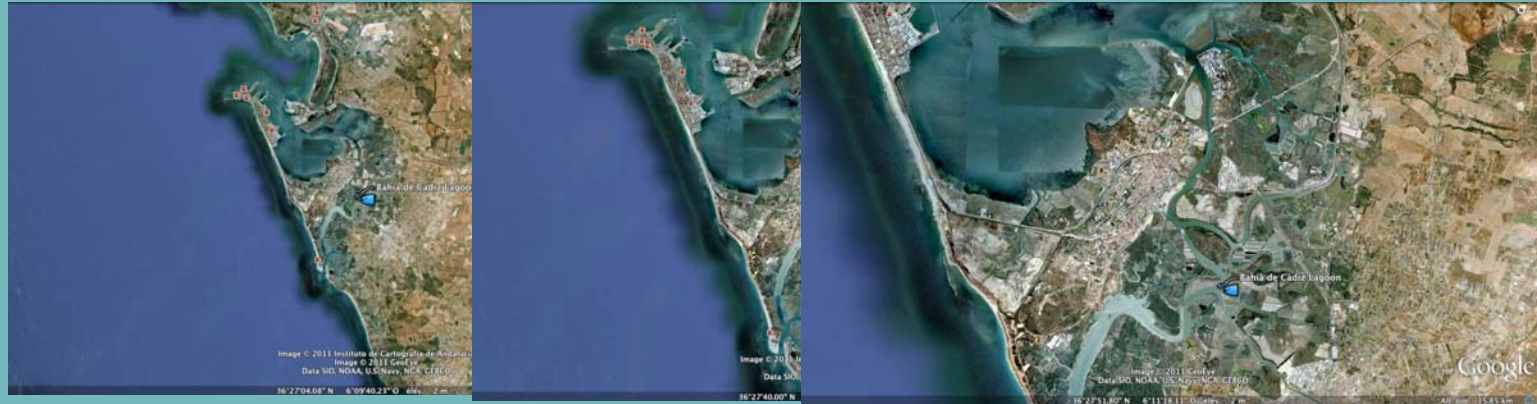
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“Veta la Palma” lagoon. Seville-Andalusia.





Lagoons in Cadiz Bay. Cadiz-Andalusia.



- It is an area with tidal influence of a high degree of transformation and saltmarsh were formerly for the production of salt.
- The Bay of Cadiz is protected as natural park and includes a sea area and another area of marsh that is flooded with the influence of the tides.
- This structure of canals, ponds, etc, has been maintained over time and has been transformed into aquaculture facilities, some of them to extensive production and other semi-intensive.



Lagoons in Cadiz Bay. Cadiz-Andalusia.



In this area aquaculture is the engine of local development and fishing is an residual activity with little control. In fact there are no data on fishing catches in the area.





“Mar Menor”. Cartagena-Murcia.



- The Mar Menor is an ancient flood basin that has formed a hypersaline coastal lagoon. Is protected as a Ramsar site.
- This lagoon is surrounded by a set of activities such as agriculture, industries, housing estates, etc, but especially a very large urban development that threatens the environmental sustainability of the area.
- Fishing is almost nonexistent, only given a artisanal fishing (mulletts) and particularly sport fishing. Meanwhile, aquaculture does not exist in the area.



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“Mar Menor”. Cartagena-Murcia.





“Albufera de Valencia”



The Albufera of Valencia is a shallow coastal lagoon (average depth of 1 m) on the Mediterranean coast south of the city of Valencia.

It covers an area of 23.94 square kilometers and is surrounded by 223 km² of rice fields.

Separated from the sea by a narrow sand barrier and where sand dunes have been stabilized by a pine forest.



“Albufera de Valencia”

- The Albufera is a staging post for many species of migratory birds.
- Its ecological value is great because here are important species in danger of extinction, such as fartet (*Aphanius iberus*) or samaruc (*Valencia hispanica*), both are Cyprinidae family.
- Today, as a result of the overexploitation and pollution of the waters, fishing is only maintained through the mullets. The other two species, eel and sea bass have been phased out.





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“Albufera de Mallorca”.

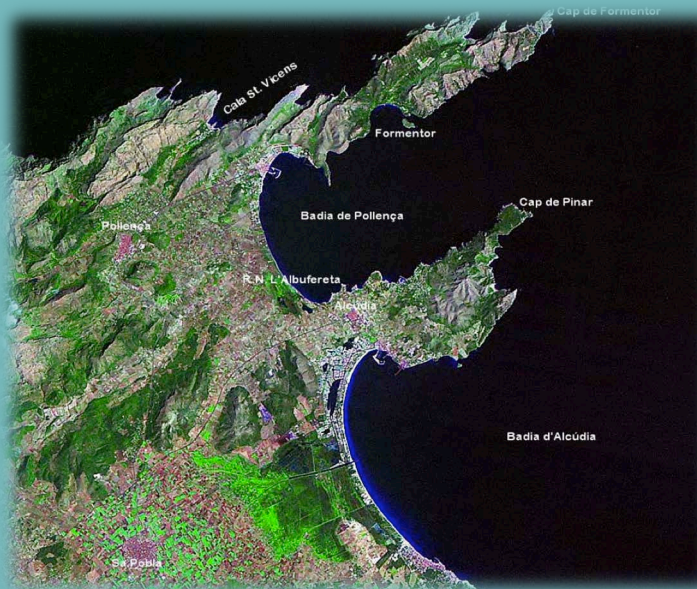




“Albufera de Mallorca”.

The Albufera of Majorca is the largest wetland area and most important of the Balearic Islands.

It is a lagoon separated from the sea by a set of dunes, which for many centuries and human influence has been filled with sediments into a broad floodplain.





“Albufera de Mallorca”.

The natural park of Albufera de Mallorca gives protection to some 1708 hectares of marsh and dunes. Has a high diversity of vegetation, fish and birds.

The fishing is almost nonexistent, only to give demonstrations of traditional crafts for fishing eel and mullets and aquaculture in the area near there.





“Delta del Ebro” lagoon. Catalonia.



The Ebro delta is the largest wetland in Catalonia and one of the largest in Western Europe.

Currently facilities large hydroelectric dams on the river has slowed the growth of the Delta and coastal erosion is greater than the sediments deposited by river.

These problems must be added the collapse of the delta, saline intrusion, the introduction of the new issue of transfers, the decline in Ebro River, the accumulated pollutants, etc.



“Delta del Ebro” lagoon. Catalonia.

The Ebro Delta is composed of a set of geomorphologic elements, among which are 8 lagoons. Of these we selected the two largest (Lencanysada and Calaixos de Buda).

Economic activities include agriculture (mainly rice), fishing, aquaculture and tourism with a total annual economic value of about 100 million Euros. The fishing is done is artisanal fixed gear and species such as eels, mullet, etc, and also makes sport fishing.

In the area there are some aquaculture farms on both the inland and other experiences at sea.





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main typologies of coastal lagoons in Spain

SUBREGION	NAME OF LAGOON	LOCATION		SURFACE	Typology	Ecology	Ownership	Management	Protection
		Site	Cord.						
Atlantic Coast	VETA LA PALMA	Seville	37° 0'23.81"N 6°12'20.41"W	11.300 ha	estuarine lagoon	High biodiversity and productivity	Public-Private	Private	Natural Park
	BAHÍA DE CADIZ	Cadiz	36°26'38.35"N 6°10'20.34"W	10.522 ha	Intertidal lagoon	High biodiversity and productivity	Public	Regional Government	Natural Park
	MAR MENOR	Cartagena	7°42'43.82"N 0°47'21.36"W	1,82 ha	Hypersaline Coastal lagoon	Medium biodiversity and productivity	Public	Regional Government	ZEPIM Ramsar 706
Mediterranean Coast	ALBUFERA DE VALENCIA	Valencia	39°19'57.50"N 0°21'7.78"W	21.120 2.800 ha L	"Albufera"	High biodiversity and productivity	Public	Regional Government	Natural Park
	ALBUFERA DE MALLORCA	Majorca	39°47'6.97"N 3° 6'0.59"E	1.700 ha	"Albufera"	High biodiversity	Public	Regional Government	Natural Park
	DELTA DEL EBRO	l'Encanyissada Tarragona	40°38'46.95"N 0°39'41.52"E	1.192 ha	Coastal lagoon	High biodiversity and productivity	Public	Regional Government	Natural Park Ramsar 43
	7.736 ha	Calaixos de Buda	40°41'53.50"N 0°51'19.03"E	507,09 ha					



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Important coastal lagoons for fisheries and aquaculture

SUBREGION	NAME OF LAGOON	LOCATION		SURFACE	Typology	Aquaculture Production	Capture fisheries	Activities around the lagoon
		Site	Cord.					
Atlantic Coast	VETA LA PALMA	Seville	37° 0'23.81"N 6°12'20.41"W	11.300 ha	estuarine lagoon	1000 tons	Artisanal	- Agriculture - Environmental tourism
	BAHÍA DE CADIZ	Cadiz	36°26'38.35"N 6°10'20.34"W	10.522 ha	Intertidal lagoon	1200 tons	Sport fishing Artisanal and shellfish	- Agriculture - Industrial estate
	MAR MENOR	Cartagena	7°42'43.82"N 0°47'21.36"W	1,82 ha	Hypersaline Coastal lagoon	No	200-250 Tons from Artisanal fishing Unknown Sport fishing	- Sport fisheries - Tourism and Urbanization
Mediterranean Coast	ALBUFERA DE VALENCIA	Valencia	39°19'57.50"N 0°21'7.78"W	21.120 2.800 ha L	"Albufera"	No	Artisanal fishing	- Agriculture - Environmental tourism
	ALBUFERA DE MALLORCA	Majorca	39°47'6.97"N 3° 6'0.59"E	1.700 ha	"Albufera"	No	Artisanal fishing	- Tourism and Urbanization
	DELTA DEL EBRO	l'Encanyis sada Tarragona	40°38'46.95"N 0°39'41.52"E	1.192 ha	Coastal lagoon	Presence	Artisanal fishing	- Agriculture - Environmental tourism
	7.736 ha	Calaixos de Buda	40°41'53.50"N 0°51'19.03"E	507,09 ha		No		



other activities carried out in coastal lagoons

Tourism



Environmental activities



Industries



Sport fishing



Agriculture



Urbanization



Hunting





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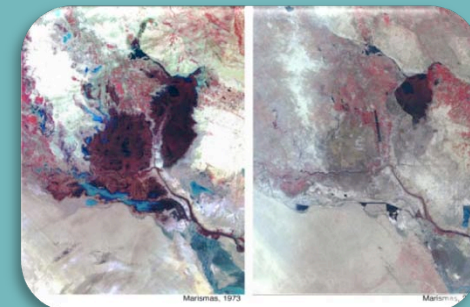
environmental issues

SUBREGION	NAME OF LAGOON	SURFACE	pollution	waste waters	overfishing	bird migration routes	bird predation by ichthyophagous birds	pathology spread between cultured/ wild stocks	genetic impact of restocking actions and aquaculture activities	wildlife conservation	
South-Atlantic Coast	VETA LA PALMA	11.300 ha	No	No	No	Yes	Yes	No	No	High value	
	BAHÍA DE CADIZ	10.522 ha	Yes	Yes	Yes	Yes	Yes	Unknown	Unknown	Medium value	
	MAR MENOR	1,82 ha	Yes	Yes	No	No	No	No	No	Low value	
South-Mediterranean Coast	ALBUFERA DE VALENCIA	21.120 ha	Yes	Yes	No	Yes	No	No	No	High value	
	ALBUFERA DE MALLORCA	2.580 ha	Yes	Yes	No	Yes	No	No	No	High value	
	DELTA DEL EBRO	l'Encanyissada	1.192 ha	Yes	Yes	No	Yes	No	Unknown	Unknown	High value
		Calaixos de Buda	507,09 ha		No	No	Yes	No	Unknown	Unknown	



emerging problems

- Pollution waters.
- Disruption of water regime.
- Grounding of the marsh.
- Urbanism in the dune system.
- Industrial pressure around.
- Hunting in the parks.
- Impacts of infrastructure.
- The increased pressure from tourism and recreation.





development perspectives and interventions by the public administration

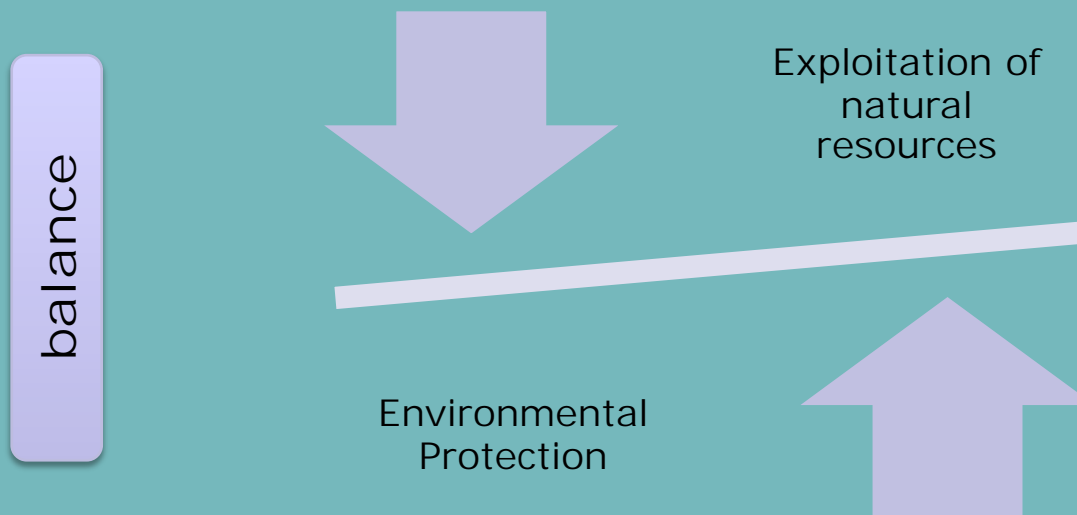
Administrative competences:

- Regional Ministry of Environment: All Lagoons areas considered, are place in the Public Maritime Domain (except Veta la Palma) so under an Environment “figure” of Protection.
- Regional Ministry of Agriculture and Fisheries: Artisanal and sport fishing takes place as well as aquaculture, but there is a lack of combined management of resources.
- Regional Ministry of Tourism: Different users of the Lagoons coexist on the same environment.



Preliminary conclusion

There is a need of intervention from all administrative bodies in coordination with all the users of the space to achieve an Integrate Lagoons Management using an ecosystem approach.





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Many thanks for your attention
and...we go on working in
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