



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



LaMed-2 Project

Turkey country report



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**Meeting on
Mediterranean Coastal Lagoons Management:
interaction between aquaculture and capture fisheries**

Cagliari, Italy, 28-30 June 2011

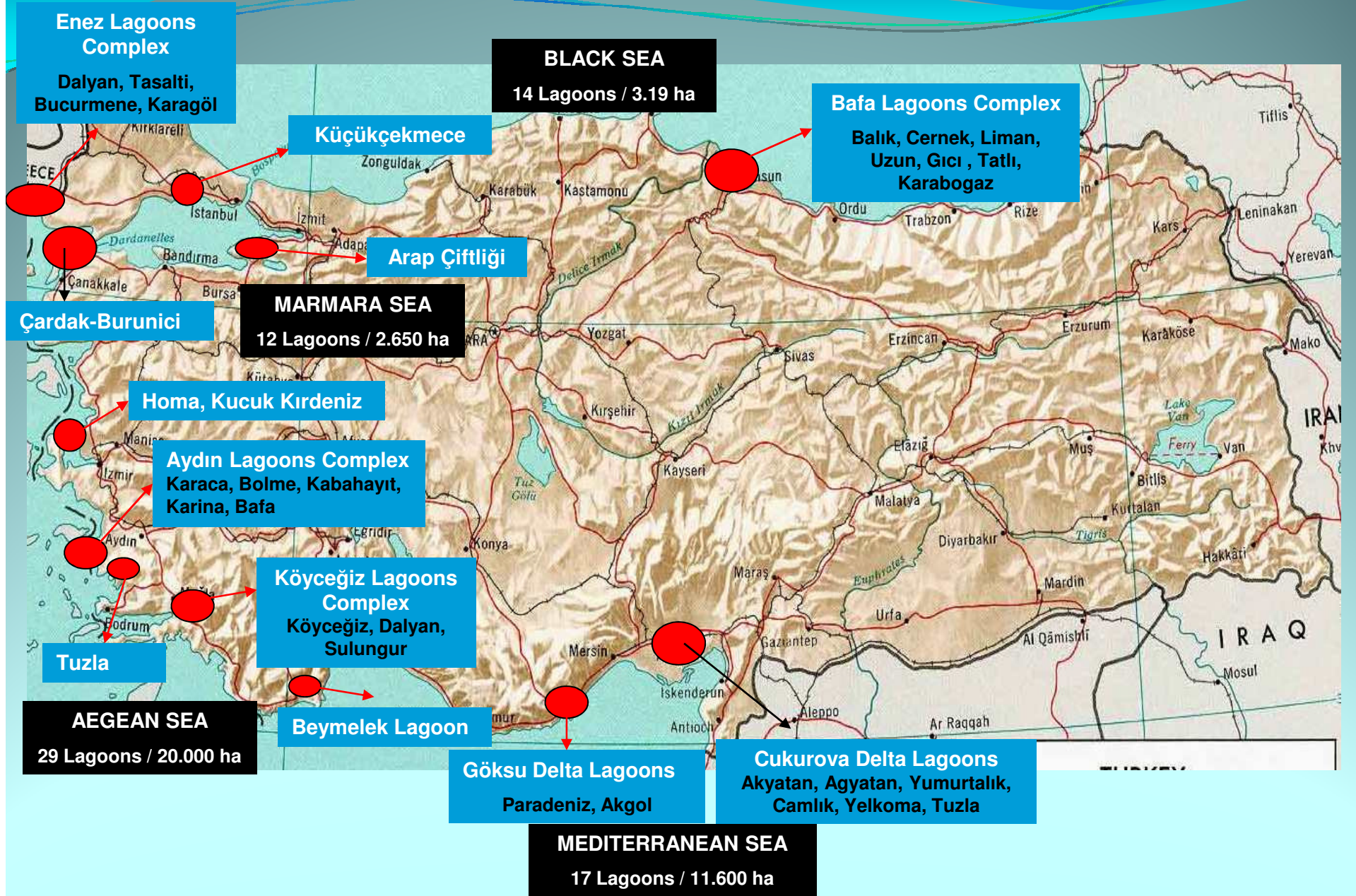


Number, surface, distribution of Turkish Lagoons

Regions	Number	Surface Area (ha)
Black Sea	14	3.139
Marmara Sea	12	2.650
Aegean Sea	29	20.000
Mediterranean	17	11.600
TOTAL	72	37.389



Distribuiton of Turkish Lagoons





Current Fishery Management in Turkish Lagoons

- The traditional fishery management is currently adopted by almost all Turkish lagoons where this activity is still in use.
- Lagoon fishery is usually managed as follows: from June to January, the fishermen trap the fish inside the lagoon by closing the fishing barrier - a fixed trap usually made of a paling framework and marsh reed and iron fences placed at the lagoon mouths to the sea.
- The fishermen do this when they believe that enough fish have entered the lagoon, then the capture of the fish trapped in commences immediately after the closure of the barrier.





Main typologies of Turkish lagoons

Activities	Number	%	Water Area (ha)	%
Fishing	43	60	23,085	64
Aquaculture	3	4	5,650	16
Recreation/ tourism	14	9	6,730	19
Hunting	32	4	19,522	54
Wildlife conservation	23	2	30,289	83
Reed harvesting	5	7	12,619	35
Cattle crazing	6	8	2,559	7
Leech collection	5	7	2,559	7
Research and traning	4	6	3,100	9
None	23	2	1,815	5
of which abandoned	16	2	1,674	5





General characteristics of Turkish lagoons

Regions	Number	Surface area (ha)	Production* (ton)	N. of Fisherman
Black Sea	14	3.139	1.100	32.936
Marmara Sea	12	2.650	45	479
Aegean Sea	29	20.000	1.125	1.421
Mediterranean	17	11.600	430	834
TOTAL	72	37.389	2.700	35.670

(*): Same data obtained by from fishermen and renters



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Production data for important coastal lagoons

Name	Water area (ha)	Production (tonnes)*				
		1976	1986	1995	2003	2008
Bafra Lagoons Complex	2.359	500	200	125	111	99
Enez Lagoons Complex	330	200	150	20	38	34
Aydın Lagoons Complex	10.128	61	88	75	76	154
Köyceğiz Lagoon	5.500	480	420	350	250	211
Akgol-Paradeniz Lagoons	1.410	90	70	60	55	50
Akyatan Lagoon	5.000	236	116	114	105	98
Ağyatan Lagoon	1.100	80	60	12	10	8
Camlık Lagoon	1.300	90	70	40	30	25

(*): Same data obtained by from fishermen and renters

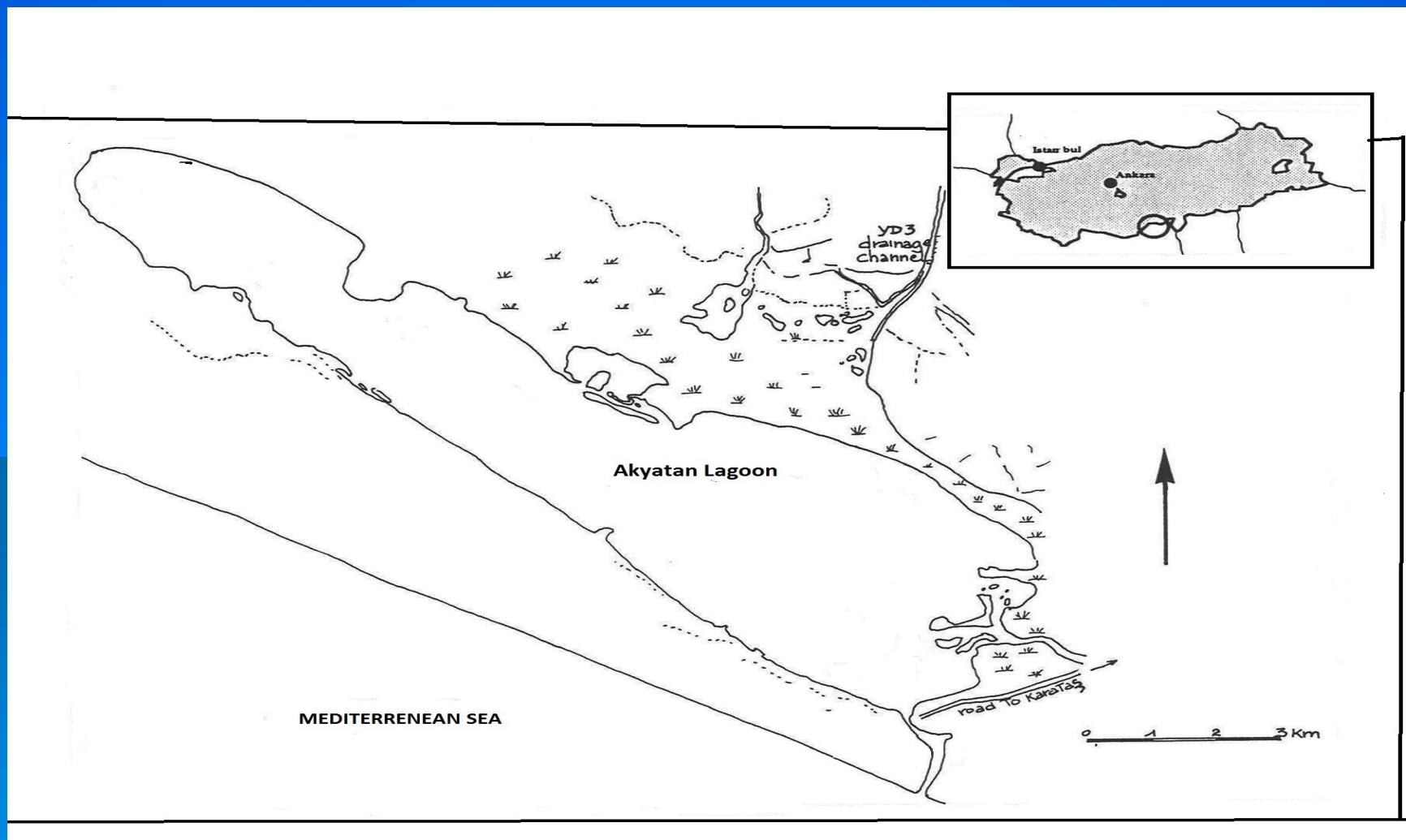


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Akyatan lagoons





Fishing gears used in Akyatan lagoons

Gear	Period (from to)	Mesh size (mm)	Size (m)	Material	Knot/hook
Trammel net	Nov.-Jan.	30 -34	100	nylon	knotless
Seine net*	Mar.- April	2	12-18	nylon	knotless
Longline	Sept.-Feb.	-	500	nylon	-
Fyke net	Sept.-Feb.	20 -22	7	nylon	-
Fishing chamber	June- Febr.	30	138	Cane, iron bars	
Line*	May - Sept.	For sea bream fingerling		naylon	mixed

(*): these fishing types are banned from 2000



Main species catching in Akyatan lagoons

Species	Period (from to)	Size (kg)	Unit Price (US\$/kg)	Fry*
Sea bass <i>D. labrax</i>	Nov.-Feb.	0,4 - 5	2,8 - 10	March - May
Sea bream <i>S. aurata</i>	Mar.- April	0,1 – 0,25	2,8 – 6,7	March - May
Grey mullet <i>M. cephalus</i>	June – Oct.	0,2 – 0,3	4,4	-
Juveniles (small mullet)	Nov.-Dec.	0,25	0,9 -3,1	-
Eel <i>A. anguilla</i>	Nov.-Dec.	0,25	7,8	-
Prawn <i>P. semisulactus</i>	Sep-Nov		1,2-2	



(*): these fishing types are banned since 2000



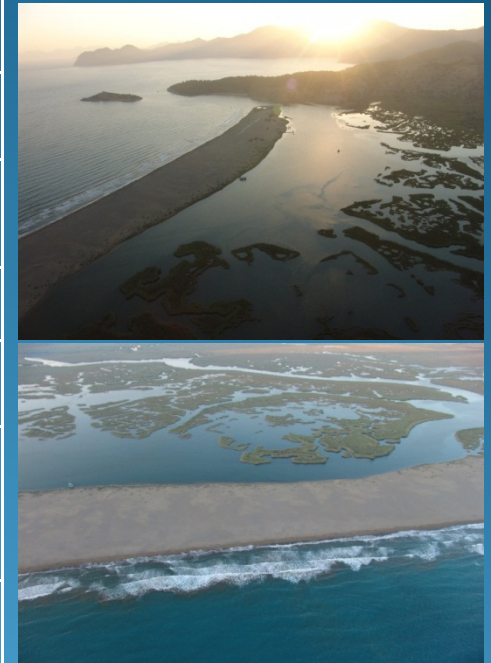
Fish landing in Akyatan lagoons (2003-2008)

Species	2003	2004	2005	2006	2007	2008
<i>D. labrax</i>	4.408	1.234	8.901	25.238	2.934	11.366
<i>S. aurata</i>	14.918	4.266	67.561	77.924	11.105	26.819
<i>M. cephalus</i>	950	404	550	2.618	660	585
<i>M. cephalus</i> (>250 g)	20.710	31.250	35.129	69.209	50.322	58.610
<i>A. anguilla</i>	3.120	1.488	2.654	6.121	8.841	996
TOTAL	41.106	38.624	114.795	181.110	100.271	98.376



Protected lagoons in Turkey

Protection Status	Lagoons
National Parks	Karina, Mavi Göl, Kara Göl, Anafarta Gölü
Specially Protected Areas	Akgöl, Paradeniz, <u>Köyceğiz</u> , <u>Dalyan Gelemiş Gölü</u>
Natural Parks	Bafa Gölü
Nature Protection Areas	<u>Yumurtalık</u> , Sarıkum Gölü
Wildlife Conservation Areas	Cernek Gölü, Simenlik Gölü , Homa Dalyanı, Akyatan, Tuz Gölü
Site Areas of the Regional Councils for the Protection and Control of Natural and Cultural Heritage	Sarıkum Gölü, İgneada, Mert, Erikli, Hamam Gölü, Dalyan Gölü, Işık Gölü, Taşaltı Gölü, Karagöl, Tuzla Gölü , Küçükçekmece, Poyrazlar Gölü, Hoyrat Gölü, Çardak: Çandarlı, Dalyan Gölü, Bakıçay, <u>Köyceğiz</u> , <u>Dalyan</u> , Gelemiş Gölü, <u>Yumurtalık</u>
TOTAL	32 Lagoons





Protected areas & national parks



Source: Kirac & Savas, 2002



Protection problems of Turkish lagoons

NPA

RAMSAR

WCA



Environmental issues

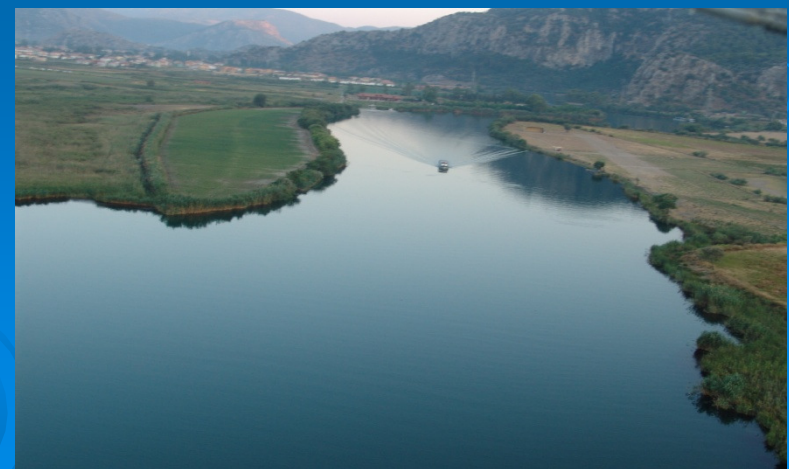
- ✓ **absence of freshwater**: no permanent inflow apart from rain and run-off
- ✓ **absence of sea water**: pass usually silted up or absent
- ✓ **shallowness**: a water depth of less than half meter
- ✓ **submerged vegetation**: a dense mattress of aquatic plants in the whole water column spread across more than 50% of the total area
- ✓ **sedimentation**: an active process, whether from the freshwater inflows, floods or sea movements
- ✓ **pollution**: risk of contamination by agrochemical, industrial waste waters and domestic sewage
- ✓ **new settlements**: the area is affected by a considerable building activity
- ✓ **floods**: risk of flood during the rainy season from nearby river or drainage network





Emerging problems

- Lack of environmental awareness
- To increase in the tourism urbanization facilities
- Unconsciously and uncontrolled utilizations
- Disposal of industrial and domestic wastes to the lagoons
- Siltation
- To posse majority of irrigation systems to the lagoons
- Using the lagoons as discharge places for used and polluted waters
- Lack of lagoon based plan and coastal zone management plan

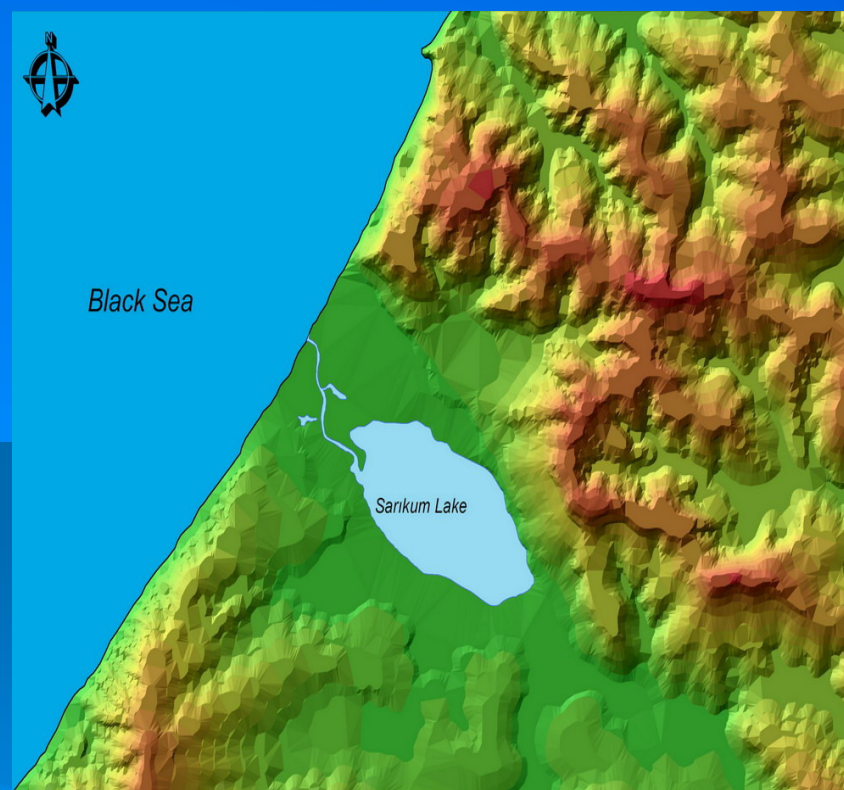




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Black Sea Lagoons



Sinop –Sarikum lagoon



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Marmara Lagoons



Bücürmene Lagoon – Edirne



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Marmara Lagoons



Taşaltı Lagoon – Edirne



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Aegean Lagoons



Karina Lagoon - Aydın



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Mediterranean Lagoons



Akyatan Lagoon - Adana



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Mediterranean Lagoons



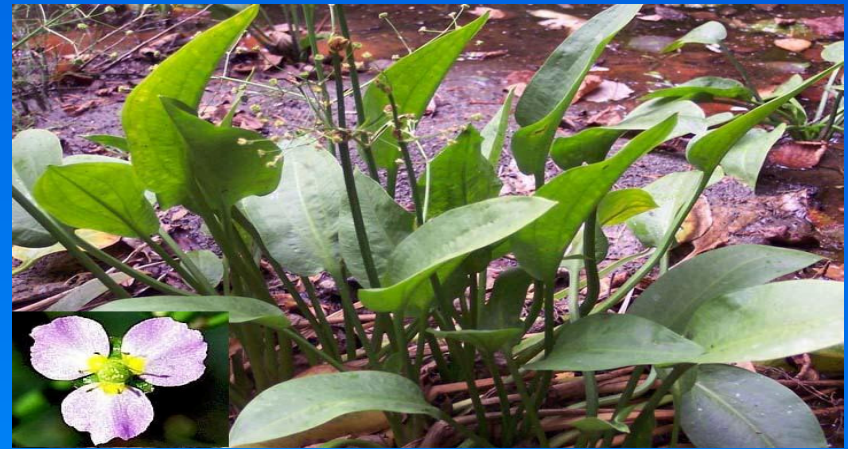
Beymelek Lagoon - Antalya



DISCUSSION & CONCLUSION

- Turkey has 72 lagoons along the 8 333 km long coastline.
- However, in recent years, due to the increase in tourism and urbanization facilities, unconsciously and uncontrolled utilization, disposal of industrial and domestic wastes to the lagoons and siltation, many lagoons today cannot be used.
- Most irrigation systems which were constructed before or are under construction are in the productive deltas where there are large lagoons as well. Besides this, for the lack of environmental awareness, lagoons have remained as discharge places for used and polluted waters.
- **A responsible and integrated lagoon management plan, built through stakeholder consensus that balances the sustainable use of the lagoon resources with the livelihoods and needs of the resource users, should be developed and implemented.**

Let's protect our lagoons for our next generations



Many thanks to the GFCM and to the Italian Government
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