Project name: MED4EBM - Mediterranean Forum For Applied Ecosystem-Based Management
Application case: EB-ICZM in Kneiss Islands Nature Reserve (Tunisia)
Report type: Thematic Scoping
Issued by: Institut National des Sciences et Technologies de la Mer

Item	Description	Key management issues	Key stakeholders
Biophysical systems	***Identify each of the main components which constitute the key coastal and marine biophysical systems (e.g. climate; hydrological and hydrogeological system; coastal vegetation types; wetlands; mangroves; rocky coast;...***	***Identify the most important management issues (e.g. resource uses and/or conflicts; ecological problems/threats) and try to associate them with the related "biophysical...***	***Identify the most important stakeholders (e.g. institutional management, data provider, resources user) and try to associate them with the related "biophysical component" by...***
Wetlands			
Watercourses	WADRAN OUEDS and SMARA OUEDS	Coastal erosion due to destruction of halophytic vegetation. Lack of Posidonia cover. Submersion of Kneiss Islands due to sea level rising....	APAL (Agence de Protection et d'Aménagement du Littoral), DGF (General Forest Direction), CRDA (Regional Commissariat for Agricultural Development), Municipality of Ghraiba, Sfax University.
Tidal channels		Coastal erosion due to destruction of halophytic vegetation. Lack of Posidonia cover. Submersion of Kneiss Islands due to sea level rising....	APAL (Agence de Protection et d'Aménagement du Littoral), DGF (General Forest Direction), CRDA (Regional Commissariat for Agricultural Development), Municipality of Ghraiba, Sfax University.
Intertidal zones (Estran)		Coastal erosion due to destruction of halophytic vegetation. Lack of Posidonia cover. Submersion of Kneiss Islands due to sea level rising....	APAL (Agence de Protection et d'Aménagement du Littoral), DGF (General Forest Direction), CRDA (Regional Commissariat for Agricultural Development), Municipality of Ghraiba, Sfax University.
Supratidal mudflat (Sebkhas)		Coastal erosion due to destruction of halophytic vegetation. Lack of Posidonia cover. Submersion of Kneiss Islands due to sea level rising....	APAL (Agence de Protection et d'Aménagement du Littoral), DGF (General Forest Direction), CRDA (Regional Commissariat for Agricultural Development), Municipality of Ghraiba, Sfax University.
Agricultural Ecosystem			
Olive Groves			
Plant species	***Identify key groups of species which, for any reason, are of particular interest for the management of the focused ecosystems (e.g. endemic; threatened; invasive; commercial. Note that plant communities/habitat may be...***	***Identify the most important management issues (e.g. resource uses and/or conflicts; ecological problems/threats) and try to associate them with the related "biophysical...***	***Identify the most important stakeholders (e.g. institutional management, data provider, resources user) and try to associate them with the related "biophysical component" by...***
Marine Flora	Seagrasses cover. Dominant species: Posidonia sp. Cymodoca nodosa Zostera sp.	Destruction by illegal fishery techniques	APAL INSTM Universities CRDA Marine Guard (Ministry of Interior)
Terrestrial Flora	Species of commercial values as cosmetic and pharmaceutical uses.		DGF APAL (NGOs) WWF RAC-SPA IUCN

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Halophilic vegetation	Presence of endemic species, threated species. Please see APAL Management Plan	Impact of the climate changes on the regression of the vegetation cover. Illegal camping. Vegetation burning.	
Nitrophilic vegetation	Presence of endemic species, threated species. Please see APAL Management Plan		
Nitrohallophilic vegetation	Presence of endemic species, threated species. Please see APAL Management Plan		
Animal species	***=> Identify key groups of species which, for any reason, are of particular interest for the management of the focused ecosystems (e.g. endemic; threatened; invasive; commercial). => Identify also key groups/taxa which are important in the structure of the relevant ecosystems and related...***	***Identify the most important management issues (e.g. resource uses and/or conflicts; ecological problems/threats) and try to associate them with the related "biophysical component" by listing each of them in the same line as that of the related component.***	***Identify the most important stakeholders (e.g. institutional management, data provider, resources user) and try to associate them with the related "biophysical component" by listing each of them in the same line as that of the related component.***
Birds	Kneiss island is the most important area of birds in term of numbers in the Gulf of Gabes. Available data: number of species; species abundance	Increase of yellow-legged gull Eggs' trampling by human Destruction of habitats Effect of climate changes on the distribution of the birds in the island and on the time of coming to the zone	AAO DGF Gabes University (data provider)
Nesting species			AAO DGF Gabes University (data provider)
Migratory species	The imporant species are: Larus méchahellis Aignetta garzetta Photoenicopteris ruber resens	Effect of climate changes on the distribution of the birds in the island and on the time of coming to the zone	AAO DGF Gabes University (data provider)
Fish	Estimation of number of retained species target species and bycatch: about 50 species. Key species (protected, flag species) need to be added. The most of them have an economic relevance. Available information: catcht / species/ fishing gear Work forces (people, boats, fishing activities) known No retained species (discards and ETP species): Few information about this species More biodiversity information needs to be added Ichtyofauna recensement biodiversity	Illegal, unreported and unregulated IUU fishing. Commercialisation chain issues. Destructive fishery techniques. Overexploitation. Impact of irregular gear on ichthyofauna Impact of external factors (pollution climate changes on the biodiversity)	DGPA CRDA Ministry Agriculture Research institution INSTM and Universities (lassad neifar;

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Pelagic fish			
Benthic fish			
Crustacea	Shrimps (Penaeus kurathurus, which is endemic and P. aztecus, which is invasive. Metapeneus monocerus). Blue crab is an invasive species More biodiversity information needs to be added	Illegal fishery Commercialisation chain issues Destructive fishery techniques Overexploitation	DGPA CRDA Ministry Agriculture
Mollusca			
Cephalopoda	Bivalve (Ruditapes decussatus) Squid (Sepia officinalis) Eledon muscata More biodiversity information needs to be added Clam (R. decussatus) Couteau (Solen marginatus)	Illegal fishery Commercialisation chain issues Destructive fishery techniques Overexploitation Decrease of exploitable stock Suspension of the clam collection Illegal and destructive clam relay Illegal, unreported and unregulated IUU fishing	DGPA CRDA Ministry Agriculture
Reptiles	Marine Turtles: Kneiss island is a passage and wintering site Lizards (Species to be added)		
Amphibians	Frog species are present, observed with rainy weather (they avoid saline environment), in particular along the water courses.		
Mammals	Marine mammals: Dolphins and sometimes, near the islands, whales (Balaenoptera musculus)		
Other Invertebrates			
Cnidaria	Phylum that includes jellyfish, sea anemones, corals (Better description is needed)	Habitat destruction. Pollution. Impact of external factors and illegal gear.	Research institutions Universities RAC-SPA
Echinodermata	Sea stars, sea urchins, sea cucumbers	Impact of external factors and illegal gear.	Research institutions Universities RAC-SPA
Insecta	Terrestrial insects. Example: Saissetia oleae (fly)	Coleoptera (Neirun) and the fly S. oleae damage the olive groves.	Research institutions Universities RAC-SPA
Arachnida	Terrestrial arachnids Scorpions		

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Coastal infrastructures	***Identify the main groups/category coastal infrastructures (e.g. ports; marinas; hotels; road network; urban areas; irrigation and drainage networks).***	***Identify the most important management issues (e.g. ecological problems/threats related to the given infrastructure) and try to associate them with the related "biophysical...***	***Identify the most important stakeholders (e.g. institutional management, data provider, user of the infrastructure) and try to associate them with the related "biophysical component" by...***
Sea Ports			
Zaboussa Port	One of the 2 main Harbour presents inside the protected area of the Kneiss Islands	Electricity problems, lack of maintenance, sitting up increasing, lack of local authorities	APIP (Agency of the Harbours and Fishing Facilities)
Skhira Port	One of the 2 main Harbour presents inside the protected area of the Kneiss Islands	Lack of maintenance	APIP (Agency of the Harbours and Fishing Facilities)
Skhira oil Terminal	Terminal for Oil Export		OMMP (Office of The Merchant Navy and the Ports), STIR (Tunisian Company of Refining Industries), ANPE, TRAPSA, Min of Finance, Min...
Skhira phosphate industries...		Minimal Phosphate pollution	Ministry of Industry, ANPE, GCT (Tunisian...
Purification facilities for clams	Rasyounga	Pollution deriving from the purification wastewater.	APAL, DGSV, CRDA, UTICA
Mirador for bird watching	The mirador on the main island is destroyed, while the one present in the coastal area is still functional	Repairing in process	Local NGOs
Rest areas	Areas used both from tourists and local population	Better development of the infrastructures presents inside the rest areas	DGF, ACG (local NGO)
Pedestrian bridge (passerel)	The one connected to the rest area is damage, while the one present on the main island is in better condition.	Overused due to a low number of these bridges (used non only by the woman of the island but...	DGF, ACG (local NGO), APNES (local NGO - original builder in the 2005)
Cultural and Historical			
Remains of the Monastery of...			
Ruins			
Archaeological area			
Urban Areas		Lack of urban development plan	Ghraiba municipality
Economic activities	***Identify the main sectors of economic activities (e.g. agriculture; livestock; industry; fisheries; aquaculture; energy production; transport; tourism).***	***Identify the most important management issues (e.g. ecological problems/threats related to the given economic activity) and try to associate them with the related "biophysical...***	***Identify the most important stakeholders (e.g. institutional management, data provider, economic actor) and try to associate them with the related "biophysical component" by...***
Fisheries			ACG UTAP CRDA DGPA Ministry of Agriculture
Coastal fishing	Most of the fishermen are local, resident in the area, sometimes (from April to August) people from other areas (Chebba e.g.) Target species: Lisa orata	Illegal fishing activities Illegal methods / techniques Overexploitation generated by increase of the number of boats. Invasive species	ACG UTAP CRDA DGPA Ministry of Agriculture

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Shore fishing (Clam and Annelids harvesting)	Mainly women are involved (clam harvesting)	Illegal fishing activities Illegal methods / techniques Overexploitation generated by increase of the number of boats. Invasive species For Annelids there is no regulation, so all the harvesting is illegal....	ACG UTAP CRDA DGPA Ministry of Agriculture
Aquaculture (Oyster)	Planned but not existing yet. Until now it is only a project		ACG UTAP CRDA DGPA Ministry of Agriculture
Purse seine fishing	Most of the fishermen are local, resident in the area, sometimes (in spring and summer) people from other areas (Gabes e.g.) Target species: Bonit	Illegal fishing activities Illegal methods / techniques Overexploitation generated by increase of the number of boats. Invasive species	ACG UTAP CRDA DGPA Ministry of Agriculture
Agriculture	70% of the farmers are men. The farms are diversified (all the subcomponents are present). Family activity. Available data: the assessment of agriculture activities is based on a high rate of approximation	Lack of natural grazing space Lack of work force, workers migrate from agriculture to fishing activities. Waters has high levels of salinity.	Ministry of Agriculture CRA Hchichina
Olive groves	Extraction rate of olive oil over 30% (as maximum rate; good quality).		Ministry of Agriculture CRA Hchichina
Almond orchards			Ministry of Agriculture CRA Hchichina
Raisin			Ministry of Agriculture CRA Hchichina
Livestock			
Sheep farming			
Chicken farming			
Honey production	Family Activity		
Industrial activities			ANPE Ministry of Environment ABNES (NGOs) APAL Ministry of Economy
Tunisian Chemical Group	Only one unit	Atmospheric pollution (it affects a larger area than the only Kneiss) Phosphogypsum pollution	ANPE Ministry of Environment ABNES (NGOs) APAL Ministry of Economy

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Textile manufacturing	Only one unit When clam harvesting season is closed (between May and October), women work in this factory		ANPE Ministry of Environment ABNES (NGOs) APAL Ministry of Economy
Petroleum Transport Company (TRAPSA)		Ballast water waste	ANPE Ministry of Environment ABNES (NGOs) APAL Ministry of Economy