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Application case: EB-ICZM for Kneiss Islands, Tunisia
Report type: Thematic Scoping for Application Case (System Matrix)
Issued on: 25-09-2020
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Key management issue	Key stakeholders	System component
1 - Main components of key coastal and marine biophysical systems.		
=> 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. *=> Use one bullet (=>) for each of the management issues (and add as many lines as needed).*	*=> 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.* *=> Use one bullet (=>) for each of the stakeholders (and add as many lines as needed).*	*=> 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; dunes and beaches; marine prairies; coral reefs, cayos).* *=> Use one line for each of the components (and add as many lines as needed).*
Subordination and status issues.	=> APAL (Agence de Protection et d'Aménagement du Littoral). => DGF (General Forest Direction).	Wetlands.
Submersion of Kneiss islets.	=> DGF. => CRDA (Regional Commissariat for Agricultural Development).	Supratidal mudflat (Sebkhas).
Submersion of Kneiss islets.	=> APAL. => CRDA. => Delegation of Ghraiba.	Tidal channels.
=> Degradation of both the microflora (appearance of toxic species) and the foreshore microfauna. => Impact on avifauna.	=> APAL. => DGF. => Scientific research institutions(INSTM, Sfax University, INAT, …).	Intertidal zones (Estran).
Pollution of drained water.	=> Local industry (TRAPSA, CGT). => Ministry of Agriculture. => APAL. => ANPE (National Agency for Environmental Protection).	Watercourses (Oueds).
=> Sea level rise. => Temperature rise. => Rainfall decrease.	=> APAL. => INM (National Institute of Meteorology).	Climate.
=> Depletion of macrofauna specific richness. => Bait digging issues.	=> CRDA. => Scientific research institutions (INSTM, Sfax University, INAT, …).	Marine Fauna.

Key management issue	Key stakeholders	System component
=> Desertification of seabed. => Industrial pollution (phosphates and petroleum industries, …).	=> ANPE. => Ministry of industry. => Industrial companies. => Ministry of Interior. => Ministry of Defense. => UTAP/Fishermen (Tunisian Union of Agriculture and Fishing).	Marine Flora.
=> Overgrazing. => Thicket burning. => Domestic wastes and discards. => Reduction of the vegetations coverage due to the Sea level rise.	=> DGF. => Ministry of Interior. => Ministry of Defense. => ANPE.	Terrestrial Flora.
2 - Plant Species of interest.		
=> 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. *=> Use one line for each of the management issues (and add as many lines as needed).*	*=> 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.* *=> Use one line for each of the stakeholders (and add as many lines as needed).*	*=> 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 already included under Vegetation-Types).* *=> Use one line for each of the group (and add as many lines as needed).*
=> Limits regression and structures destruction. => Use of prohibited destructive fishing gear. => Industrial Pollution.	=> APAL. => ANPE. => Ministry of Interior. => Ministry of Defense. => CRDA. => UTAP/Ffishermen. => Ministry of industry. => Industrial companies.	Marine plant cover: - Posidonia, - Zostera (Eelgrasses).

Key management issue	Key stakeholders	System component
=> Destruction by anarchic camping. => Illegal grazing. => Thicket burning. => Sea level rise.	=> APAL. => DGF. => Ministry of Interior. => Ministry of Defense. => Municipality and delegation of GHRAIBA. => Scientific research institutions and NGOs.	Terrestrial endemic halophilic vegetation.
3 - Animal Species of interest.		
=> 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. *=> Use one line for each of the management issues (and add as many lines as needed).*	*=> 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.* *=> Use one line for each of the stakeholders (and add as many lines as needed).*	*=> 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 services (e.g. mammals, marine and terrestrial; fishes, marine and terrestrial; birds; reptiles; invertebrates; corals; molluscs).*
=> Overexploitation. => Unregulated and unreported harvesting. => Illegal fishing and use of destructive gear. => Interaction with invasive species. => Impact on avifauna (Egg trampling and destruction). => Increase of the sebkhas area.	=> CRDA. => UTAP. => UTICA (Tunisian Union of Industry, Trade and Handicrafts). => CPE (Purification and expedition center). => AVFA (Agricultural Vulgarization and Training Agency). => GIPP (Interprofessional Group of Fishery Products). => DGPA (General Directorate of Fisheries and Aquaculture). => NGOs. => Ministry of Interior. => Ministry of Defense.	Marine commercial species: - Clam (Ruditapes decussatus), - Shrimp (Different species), - Oyster (Ostrea stentina), - Fish (Dicentrarchus labrax, - Sparidae, Mugilidae, Sole).

Key management issue	Key stakeholders	System component
=> Unregulated and unreported fishing. => Destructive fishing technique.	=> CRDA. => APAL. => Scientific research institutions. => Ministry of Interior. => Ministry of Defense.	Marine endemic species: -Annelids (Nereis), -Grooved razor shell (Solen marginatus).
=> Decrease in fishing catches. => Destruction of fishing nets. => Difficulty in handling fishing gear. => Unregulated and unreported fishing.	=> CRDA. => UTAP. => Scientific research institutions.	Marine invasive species: - Blue crab (Portunus segnis), - Atlantic pearl-oyster (Pinctada radiata).
=> Disturbance by human activities. => Reduction of the territory due to Sea level rise. => Egg trampling and destruction.	=> DGF. => NGOs. => Ministry of Interior. => Ministry of Defense. => Scientific research institutions.	Nesting and migrating birds.
4 - Coastal infrastructures.		
=> *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 component" by listing each of them in the same line as that of the related component.* => *Use one line for each of the management issues (and add as many lines as needed).*	=> *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 listing each of them in the same line as that of the related component.* => *Use one line for each of the stakeholders (and add as many lines as needed).*	=> *Identify the main groups/category coastal infrastructures (e.g. ports; marinas; hotels; road network; urban areas; irrigation and drainage networks).* => *Use one line for each of the groups/categories (and add as many lines as needed).*
=> Berthing difficulties. => Lack of cold room for storing fisheries product.	=> National Navy Guard. => APIP (Agency of the Harbours and Fishing Facilities) => CRDA.	ZABOUSSA port.

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Pollution due to oil transport and storage activities.	=> OMMP (Office of The Merchant Navy and the Ports). => STIR (Tunisian Company of Refining Industries). => ANPE. => Scientific research institutions.	Skhira oil terminal.
Pollution with ballast water.	=> STIR. => ANPE. => OMMP.	Structures for ballast water reception and treatment.
Phosphate pollution.	=> Ministry of Industry. => ANPE. => GCT (Tunisian Chemical Group). => ANGED (National Agency for Waste Management).	Skhira phosphate industries storage areas.
Destroyed and not functional.	=> NGO. => Ministry of tourism.	Mirador for bird watching.
Lack of effective management.	=> APAL. => Ghraiba delegation. => Ghraiba municipality.	Rest areas.
Forsaken and not valorized.	=> NGO. => Ministry of tourism. => Ministry of culture.	Remains of the Monastery of St Fulgence.
Lack of urban and development plans.	=> Ghraiba delegation. => Ghraiba municipality	Urban areas.
5 - Economic activities		

Key management issue	Key stakeholders	System component
=> 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 component" by listing each of them in the same line as that of the related component. *=> Use one line for each of the management issues (and add as many lines as needed).*	*=> Identify the most important stakeholders (e.g. institutional management, data provider, economic actor) 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.* *=> Use one line for each of the stakeholders (and add as many lines as needed).*	*=> Identify the main sectors of economic activities (e.g. agriculture; livestock; industry; fisheries; aquaculture; energy production; transport; tourism).* *=> Use one line for each of the groups/categories (and add as many lines as needed).*
=> Overexploitation / Fish stocks reduction. => Illegal fishing and juvenile catches. => Ecological structure modification by the destruction of habitats and destabilization of species richness. => Non-application of the law in relation to exploitation and marketing. => Anarchic management of resources. => Influence of intermediaries in the value chain.	=> APAL. => CRDA. => DGPA. => UTAP (fishermen /collectors). => GDP (Fisheries Development Group). => DGSV (General Directorate of Veterinary Services). => Scientific research institutions. => Ministry of Interior. => Ministry of Defense. => NGOs.	Fisheries: - Coastal fishing, - Shore fishing (Clam and Annelids harvesting), - Aquaculture (Oyster), -Light Fishing (Lamparo).
=> Soils aridity, erosion and salinization. => Illegal grazing.	=> Ministry of Agriculture. => DGF. => DGCES (General Directorate of Water and Soil Conservation). => UTAP (Farmers). => Ministry of Interior. => NGO.	Agriculture: - Mainly Olive groves, - Almond and apple tree, - Sheep farming.

Key management issue	Key stakeholders	System component
=> Oil pollution. => Anthropogenic enrichment with nutrients. => Discharge of phosphate products waste. => Pollution with ballast water.	=> ANPE. => CRDA. => APAL. => Ministry of industry. => APIP. => Scientific research institutions. => STIR. => OMMP. => GCT.	Four industrial units: - Petroleum industry (transport, storage and transfers), - Chemical industry (transformation, manufacturing and storage), - Associated port and maritime services.
=> Lack of effective management (reception infrastructures, ….). => Not included in tourist circuits Lack of communication and advertising. => Access difficulty (undeveloped seaway).	=> Ghraiba delegation. => Ghraiba municipality. => NGOs. => Ministry of tourism. => Ministry of culture.	Ecotourism: - Ornithology tourism, - Observatory for the migration, wintering, nesting and sedentarization of birds.

6 - Available Data.

Data holder *=> List the institution holding each of the datasets entry (in the same line of the corresponding dataset).*	*Relevant items.*	*Description.* *=> Provide a brief description of each the available relevant data sets. For example: technical report or scientific papers including data on habitats and species occurring in the focused area; web-portals, excel files or databases storing data on economic activities; GIS shapefiles mapping habitat, land use, coral reefs, species distribution and other relevant spatial features).* *=> Use one line for each of the datasets (and add as many lines as needed).*
Data holder	Source	Datasets
CRDA.	Statistical Year book.	Fisheries statistics.
Scientific research institutions: INSTM.	Scientific publications.	Fish stock assessments.
Ghraiba delegation, Ghraiba municipality.	Statistics documents,	Demographic structure.

Key management issue	Key stakeholders	System component
APAL.	=> APAL reports. => Scientific publications.	Management reports.
DGF, NGO, APAL.	Reports.	Avifauna structure and statistics.
APAL, RACSPA, Scientific research institutions, NGO.	=> Reports. => Scientific publications.	Fauna and flora.
INM.	Statistics documents.	Meteorological data.
Scientific publications, Monitoring project.	Scientific publications, reports.	Hydrodynamic and physicochemical data.