

The Regional Organization for the
Conservation of the Environment of
the Red Sea and Gulf of Aden

(PERSGA)

*Master Plan for the Isles des Sept
Frères/Ras Siyyan and Godoria
Marine Protected Area*

with

Recommendations for Management

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ABBREVIATIONS

DATE	Direction of Land Management and Environment
EIA	Environmental Impact Assessment
GEF	Global Environment Facility
GIS	Geographical Information System
IMO	International Maritime Organisation
IUCN	World Conservation Union
MHUEAT	Ministry of Housing, Urban Affairs, Environment and Land Management
MPA	Marine Protected Area
NGO	Non-governmental organization
PERSGA	Regional Organization for the Conservation of the Red Sea and Gulf of Aden
SAP	Strategic Action Plan
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

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The *Master Plan for the Isles des Sept Frères/Ras Siyyan and Gadoria Marine Protected Area* was prepared by Dr. Alain Jeudy de Grissac under contract to PERSGA. The work was carried out through the Marine Protected Areas component of the Strategic Action Programme for the Red Sea and Gulf of Aden, a Global Environment Facility (GEF) funded project executed by PERSGA and implemented by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank with supplementary funding provided by the Islamic Development Bank.

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EXECUTIVE SUMMARY

One of the main objectives of the National Strategy and Action Programme for the Biodiversity of the Republic of Djibouti (Presidential Decree 2001-0098 of 27 May 2001) is to promote the creation of a national network of protected areas with the following components:

- Capacity building for protected areas management,
- Local community participation,
- Preparation and implementation of management plans,
- Monitoring and research,
- Public awareness,
- Development of ecotourism.

The objectives, goals and strategies and policies for planning and managing the Marine Protected Areas (MPAs) at the national level are in line with those defined at the regional level and quoted in the Red Sea and Gulf of Aden Regional Network of Marine Protected Areas - Regional Master Plan (PERSGA/GEF 2002). The main objectives are as follows:

- To develop regional capacity in all aspects of MPA planning and management,
- To provide for the sustainable use of living marine resources,
- To support local and national economic and social development,
- To involve local communities and stakeholders as partners in MPA management,
- To conserve representative examples of the biodiversity of the Red Sea and Gulf of Aden,
- To conduct research and monitoring programmes for the benefit of MPA management,
- To enhance public awareness of the marine resources and biodiversity of the Red Sea and Gulf of Aden and the principles of sustainable use,
- To protect the unique cultural heritage of the marine and coastal environments of the Red Sea and Gulf of Aden.

In order to respect both the objectives of the country and of PERSGA, the management plan does not follow the PERSGA format exactly but adapts when necessary to the format adopted by the country. This will facilitate the declaration of the protected area and the implementation of the management plan.

The objectives of the management plan for the marine and terrestrial environment of Sept Frères-Ras Siyyan-Khor Angar and Godoria are to provide, at the same time, for the preservation and sustainable use of its natural resources, whilst improving the quality of life of the inhabitants and the image of the region and of the country.

Initially the management plan was intended only to cover the area of Sept Frères-Ras Siyyan-Khor Angar. However, during preparation it was considered that the proposed protected area of Godoria should be included due to its close proximity and the similarities between the two areas. These include similar coastal habitats such as mangroves and the same regional authority. A common plan was sought as the two areas will share the same needs in terms of staff and infrastructure and will require the same operations such as patrolling and monitoring. The two sites will present a common attraction to tour operators and visitors on trips by land or by sea.

The management plan has been prepared for a period of five years but the legislation declaring the protected area provides for any necessary change in management practices and

activities through a steering committee grouping the relevant authorities and the main stakeholders.

The management plan is based on the zoning of activities, sharing the area between strict protection and human use. For the marine environment, the two main activities are fisheries and ecotourism. For the terrestrial environment, the main activities are agriculture (mainly grazing) and ecotourism.

The management plan will guide the operation of the protected area, helping the staff to prepare annual priorities and set budgets.

The management plan includes the following action plans:

- Administration and Capacity Building (ADM),
- Natural Resources Conservation (NRC),
- Local Community Support (LCS),
- Monitoring and Research (MR),
- Tourism and Ecotourism (TET),
- Education and Public Awareness (EPA).

The main strategies and activities for each Action Plan are detailed in Table 1:

Table 1. The main strategies and activities for each Action Plan for the protected area of Sept Frères-Ras Siyyan–Khor Angar and Godoria

Action Plan	Strategies and activities
Administration and Capacity Building ADM	ADM1 Establish and enhance the management system ADM2 Develop cooperation with all stakeholders ADM3 Build the capacity of the staff ADM4 Establish and maintain the infrastructure ADM5 Identify sources of funding
Natural Resources Conservation NRC	NRC1 Develop and implement zoning of activities NRC2 Implement regulation and reduce violations NRC3 Collect and share data on biodiversity NRC4 Assess damage, develop restoration programme
Local Community Support LCS	LCS1 Support sustainable use of natural resources LCS2 Improve the quality of life of the local population LCS3 Promote research on traditional knowledge
Monitoring and Research MAR	MAR1 Develop and implement monitoring programmes MAR2 Promote and facilitate cooperation for research MAR3 Build database and GIS system MAR4 Improve communication and exchange of data
Tourism and Ecotourism TET	TET1 Develop an ecotourism programme TET2 Implement the marine ecotourism programme TET3 Implement the terrestrial ecotourism programme
Education and Public Awareness EPA	EPA1 Develop and implement an education programme EPA2 Develop and promote a public awareness programme EPA3 Provide opportunities for volunteer programmes

INTRODUCTION

The Government of the Republic of Djibouti has prepared legislation for the development of a national network of protected areas (Presidential Decree 2001-0098/PR/MHUEAT of 27 May 2001 and Law as attached in Appendix I). Within the District of Obock, this network includes the areas of Isles des Sept Frères-Ras Siyyan-Khor Angar, and Godoria. During the preparation of the management plan for the Ras Siyyan–Isles des Sept Frères complex, the proximity of Godoria and the similarities (coastal areas, mangroves, same regional authority) were important factors demanding their inclusion in a common plan. Godoria, as an adjacent area, will share the same needs (staff and infrastructure) and activities such as patrolling and monitoring. They will represent, for tour operators and visitors, a common attraction during trips by land or by sea. In addition, the size of the area will clearly demonstrate the objectives of the Government of Djibouti and will facilitate international support for the implementation of the Management Plan.

The Strategic Action Programme (SAP) for the Red Sea and the Gulf of Aden is executed by the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) and funded by the Global Environmental Facility (GEF). One of the components of the Programme is titled, Establishment of a Regional Network of Marine Protected Areas (MPA). To achieve this goal it has been necessary to develop regionally standardised site-specific master plans, incorporating a set of management guidelines, for each proposed MPA in the Region¹.

Intensive discussion and cooperation with the Government of Djibouti has allowed the development of a programme and the enhancement of national capacity building for protected areas. As a result, the first Djiboutian marine protected area within the regional network is the unique site encompassing Ras Siyyan and the Sept Frères Islands.

Teams of international, regional and national surveyors carried out detailed inter-tidal, sub-tidal, fisheries and socio-economic surveys. A full survey report was prepared. In addition to the field survey data, extensive GIS and remote sensing data were used in the preparation of the report. This site-specific master plan, which includes zoning and management plans, was developed following the survey report.

The Regional Master Plan for the Red Sea and Gulf of Aden Regional Network of Marine Protected Areas (PERSGA/GEF 2002) provides the philosophical framework for the preparation of site-specific master plans. Planning has been carried out with the cooperation and coordination of the Direction of the Environment and Land Use Planning (DATE) under the Ministry of Housing, Urbanism, Environment and Land Use Planning (MHUEAT) and with other stakeholders. During the process, discussions have taken place with all the relevant line ministries and a special meeting has been held with the Prime Minister.

One major outcome from the preparation of the Master/management plan is the need for a strong, efficient, and independent authority for the management of the national network of protected areas. This authority will have to cooperate and coordinate with all the line ministries and authorities, in particular the Ministry of Housing, Urbanism, Environment and Land Use Planning (MHUEAT), the Ministry of Agriculture, Livestock and Sea, in charge of Hydraulic Resources and its Department of Maritime Affairs, the Ministry of Defence (Navy), the National Authority for Tourism from the Ministry of Youth, Sports and Tourism, and the governor of Obock.

¹ Region (capital 'R') means the area described in Article II of the Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment 1982, entitled 'Geographical coverage'.

The best position for such an authority is to be attached to the Prime Minister's Cabinet. In order to tackle the problem of funding for the network of protected areas, it is proposed to create an environmental fund under the supervision of the Prime Minister and the authority. This fund will receive grants, donor contributions, income generated by protected areas and fines from violation. The funds collected will be reallocated to the network.

This management plan concerns two of the areas proposed for protection in the Presidential Decree 2001-0098/PR/MHUEAT of 27 May 2001 approving the Strategy and National Action Programme for the Conservation of Biodiversity. These are the areas of Sept Frères–Ras Siyyan–Khor Angar and of Godoria, the latter being considered as an adjacent site. It includes an area of land and sea with many important features including terrestrial and underwater landscapes, habitats, ecosystems and species. Six Action Plans are presented – Administration and Capacity Building, Natural Resources Conservation, Community Support, Ecotourism, Monitoring and Research, and Education and Public Awareness. More technical documents on legislation, staffing, research and volunteer agreements are included in the appendices.

Official declaration of the marine protected area will benefit the country and in particular the local people of the region of Obock. In addition, it will facilitate support from the international community as this decision is in line with the Convention on Biological Diversity (signed [13/06/1992] and ratified [01/09/1994] by the Republic of Djibouti), and other international agreements related to the environment and sustainable development.

1. DESCRIPTION OF THE RESOURCES OF THE AREA

The following description of the areas of Sept Frères-Ras Siyyan-Khor Angar and Godoria is based on the existing documentation and on the most recent surveys and studies, in particular for the marine environment, the local socio-economic conditions and the prevailing legislation.

1.1 Location, Size and Topography

Geographical description

The Republic of Djibouti is located in Eastern Africa, bordering Eritrea, Ethiopia and Somalia. Djibouti covers an area of 23,200km² and has a coastline of 370km. On the seaward side, about 30km south of the border with Eritrea is the strait of Bab al-Mandeb, 29km wide, linking the Red Sea to the Indian Ocean. Ras Siyyan marks the south-western part of the strait (Figure 1).

The Sept Frères-Ras Siyyan-Khor Angar and Godoria Protected Area is located along the coast in the District of Obock, north of Obock and south of Moulhoulé (Figure 2).

Table 2. General information on the proposed protected areas

Name of the area	Sept Frères-Ras Siyyan-Khor Angar Godoria
IUCN/National Category (See Appendix VI)	National Park/Parc National (Cat. II) Managed Resources Protected Area (Cat. IV)
Date of declaration	Prime Ministerial Decree of December 2003
Area	See Figure 3
Type of environment	Marine, wetland (including mangroves) and desert up to 453m altitude
Area covered	Total 1240km ² (land 800 km ² , sea 440 km ²)
Land tenure	State owned (and tribal rights)

The proposed area

Physical description

The proposed marine and coastal protected area encompasses the Iles des Sept Frères (Islands of the Seven Brothers) and the mainland coast from north of Ras Siyyan southwards to Khor Angar. The proposed protected area of Godoria has been included in the planning as an adjacent area due to its proximity, and the similarity of issues and needs for its management. The northern border of the protected area is located about 22km south of the border with Eritrea and 7km south of the village of Moulhoulé. The southern boundary of the proposed protected area is located approximately 22km north of Obock. The area extends approximately 50km from north to south, 15km offshore at the maximum and up to 20km inland up to La'assa.

The terrestrial area is about 800km² including approximately 40km of mainland coastline in addition to the six islands lying in the narrow strait of the Bab al-Mandeb.

The core marine area covers about 400km². It extends from 7km south of Moulhoulé to a depth of 200m including the waters around the islands from the coast up to 200m depth, and continues for about 40km² along the coast from the east of the Kadda Guéini basaltic table up to the south of the mangrove of Godoria, where it extends from the shore to a depth of 30m. Table 3

provides a summary of the area proposed for protection and its percentage of the national territory of maritime domain.

Table 3. Area proposed for protection and percentage of the national territory of maritime domain

Type of Area	Area (km ²)	Note
Mainland coast and islands	800	Less than 3.5% of the national territory
Marine area	440	Less than 0.5% of the territorial waters
Total Area	1240	

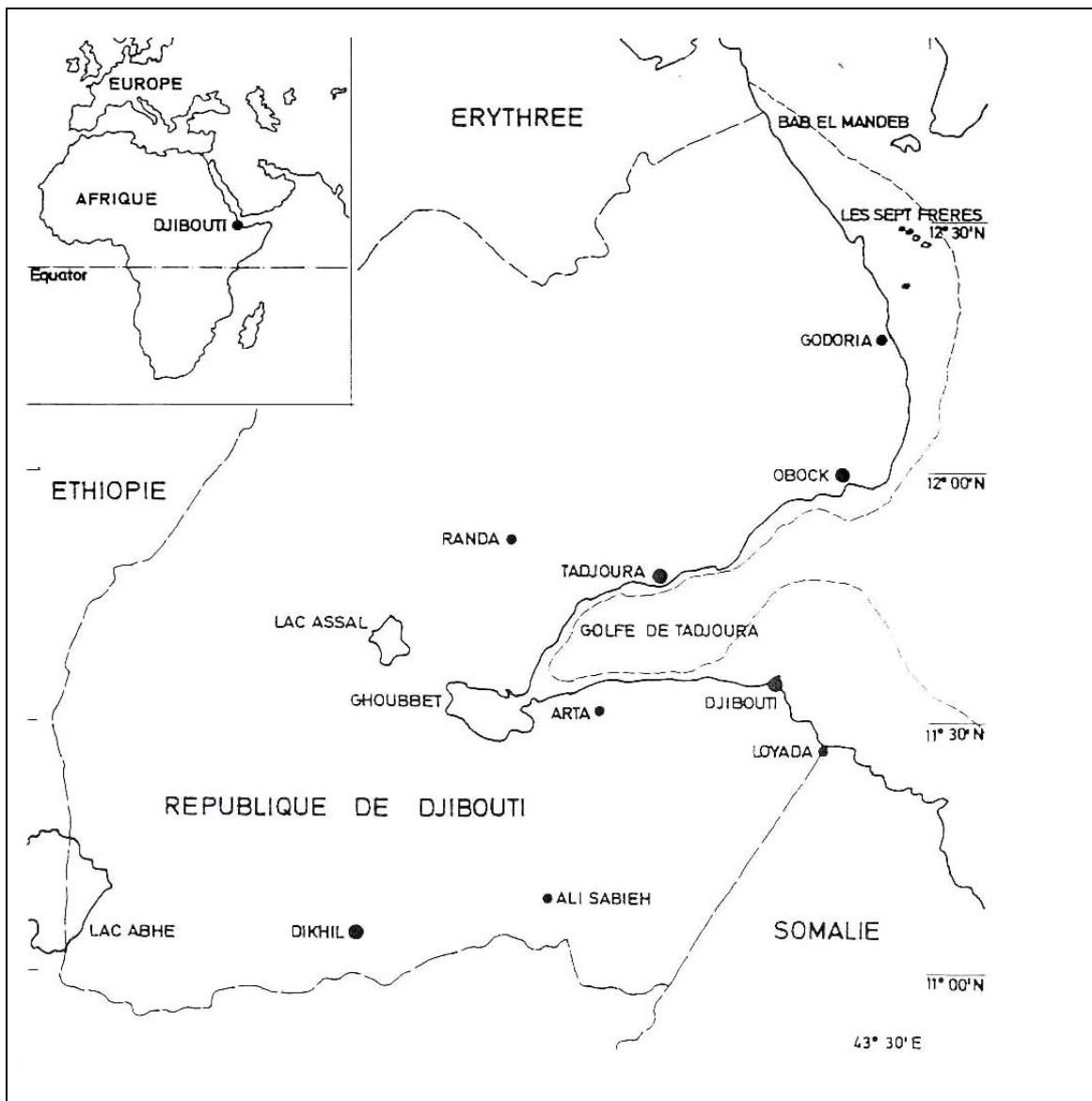


Figure 1. Map of Djibouti and location of the protected area



Figure 2. Geographical map of the Obock District including the protected area

The marine part of the protected area covers the sea up to a depth of 200 meters and is bound by the coordinates given in Table 4.

Table 4. Description of the boundaries for the marine section of the protected area

	Geo system WGS 84 Projection Mercator	Description
A	N 12° 32' 10" E 43° 13' 30"	Junction of the tracks near Ouakirou and about 7km from Moulhoulé
B	N 12° 34' 45" E 43° 16' 45"	On the line joining K and A towards the sea at a depth of 200m
C	N 12° 29' 35" E 43° 28' 10"	The eastern point offshore from Kadda Dabali Island at a depth of 200m
D	N 12° 21' 00" E 43° 31' 00"	The southern point at a depth of 200m
E	N 12° 17' 35" E 43° 25' 30"	The limit of the adjacent area at a depth of 30m
F	N 12° 07' 25" E 43° 27' 10"	The southern point of the adjacent area including the mangroves of Godoria at a depth of 30m
G	N 12° 07' 50" E 43° 23' 00"	The junction of tracks coming from Obock near Doubiya

For the terrestrial part of the protected area, the boundary points are described in Table5.

Table 5. Description of the boundaries for the terrestrial section of the protected area

	Geo system WGS 84 Projection Mercator	Description
G	N 12° 07' 50" E 43° 23' 00"	The junction of tracks coming from Obock near Doubiya
H	N 12° 08' 30" E 43° 18' 00"	The junction of tracks, altitude 46m (next point direction La'assa or north-north west through the mountain with two high points, altitude 126m and 143m)
I	N 12° 21' 15" E 43° 09' 35"	The junction of tracks near La'assa, altitude 160m (next point direction Sedorré)
J	N 12° 21' 40" E 43° 11' 20"	The junction of tracks at Sedorré (next point direction north-north west)
K	N 12° 28' 20" E 43° 08' 25"	Point at which the track turns to the west at an angle of 90°. The limit is a line joining this point to point A (direction north east)
A	N 12° 32' 10" E 43° 13' 30"	Junction of the tracks near Ouakirou and about 7km from Moulhoulé

The proposed zonation

For the marine environment, three types of zones are considered. These are recreation and fishing, recreation only, and closed area.

Most of the area is allocated for recreation and fishing as per an IUCN Category VI Managed Resources Protected Area. The objectives and regulations are set out to ensure the conservation of ecosystems and biodiversity while providing for sustainable use by the local population and allowing for the development of essential infrastructure - managed mainly for sustainable use of natural ecosystems - and monitored fishing zones for local licensed fishermen.

The areas allocated exclusively for recreation (mainly diving and snorkeling) are the Ras Siyyan eastern shore and offshore, Tolka Island (Ile Basse), Kadda Dabali Island (Grande Ile) on the eastern side and Rhounda Komaytou Island (Ile du Sud). This area can be considered as an IUCN Category II National Park. Its objectives and regulations are to ensure the conservation of national and internationally significant natural habitats and landscapes (marine and terrestrial), and representative examples of biodiversity - managed mainly for ecosystem protection and recreation.

The only area designated as closed is the island of Hamra (Ile de l'Ouest). The island and the surroundings are closed to any activity except for monitoring and research within the area delimited by the following four points:

V	N 12° 27' 54''	E 43° 21' 24''
W	N 12° 27' 54''	E 43° 22' 20''
X	N 12° 25' 42''	E 43° 22' 20''
Y	N 12° 25' 42''	E 43° 21' 24''

This area is considered as an IUCN Category I Nature Reserve or Wilderness Area. The objectives are the preservation of marine communities in their natural state (reference areas for monitoring and scientific research). The area will be managed primarily for science and wilderness protection.

As most of the marine area is to be a managed resources protected area, it could fall into this self-same IUCN category. However, in order to reinforce the status of the area at the national level, it could be named a National Marine Park without reference to IUCN categories.

No zoning has been allocated to the terrestrial part of the protected area. The whole area is considered as a Managed Resources Protected Area, IUCN Category VI.

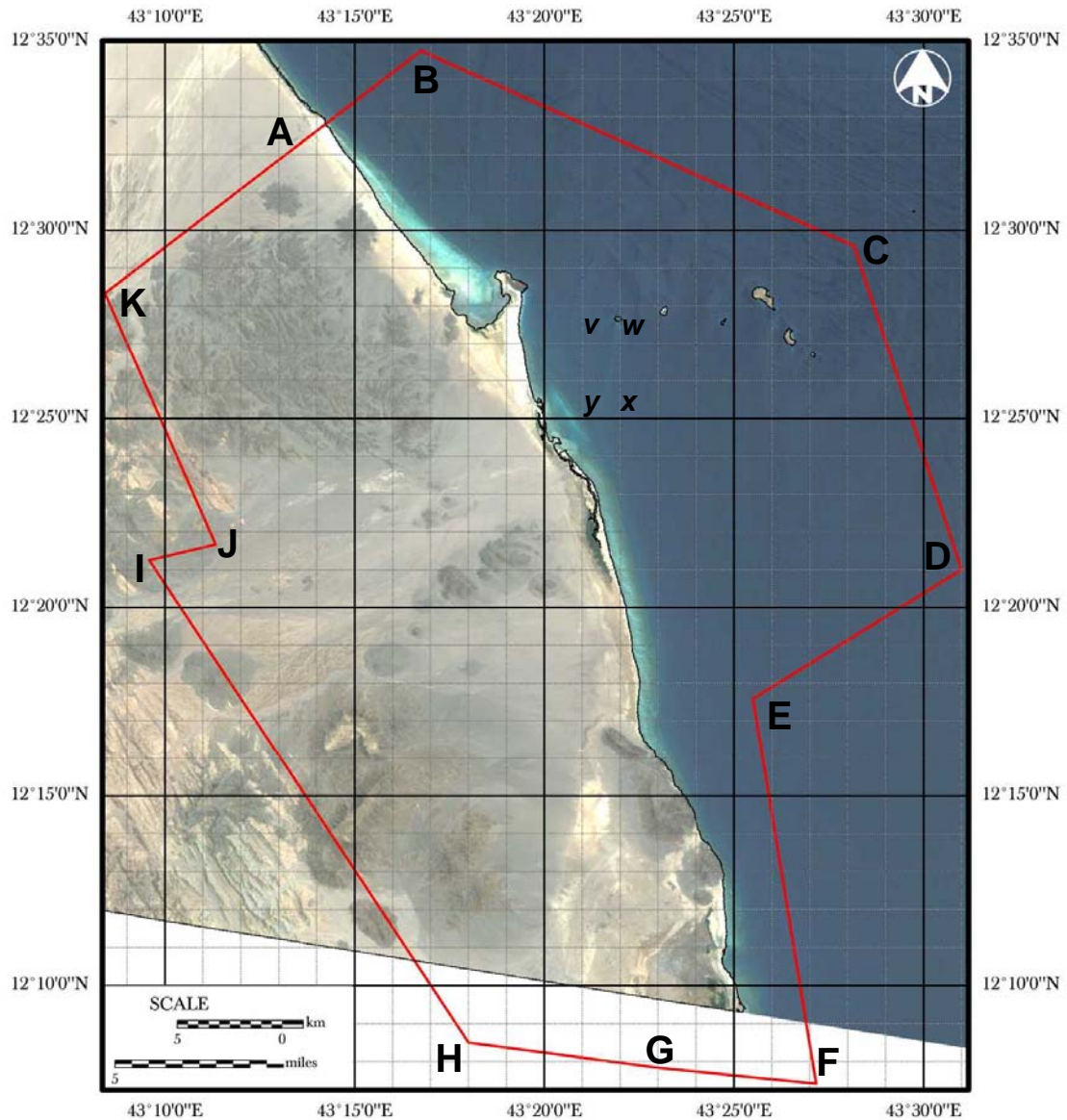


Figure 3. Satellite map of the protected area showing the proposed external boundaries

1.2 Natural Resources

Geology and soils

The geology of the Province of Obock includes examples of most of the geological formations in the country. From Obock, the coastal track rises up onto an uplifted platform of fossil coral reef (from the Quaternary era). Going north for 40km, the basaltic tables of Godoria emerge (belonging to the Dahla formation between 9 and 4 million years old), reaching up to 239m. South of these tables, the mangrove forest of Godoria is a spectacular environment. Inland, 10 to 15km from the shore, other basaltic tables reach 453m in altitude at Goh and 389m at Assa Guinneita.

Further north along the shore, at Gaherré, appear some trees and a great number of cattle (mainly goats, donkeys, camels and some zebus) as the sedimentary deposits host accessible

groundwater (fresh in winter, slightly brackish in summer). Before reaching Khor Angar (about 58km from Obock) another mangrove extends along the coast for at least 4km. The fishing village of Khor is located on a small ridge near the wetland leading to the mangrove.

Further north again one can see the volcano of Ras Siyyan, the first of the seven volcanoes after which the area was named (the Seven Brothers or Sept Frères). This volcano is young; as the basaltic scoria² of the cone cut through a 21,000 year old coral reef formation. The cape of Ras Siyyan shelters an area where mangroves are able to persist, even with little input of freshwater. North of Ras Siyyan, the small island of Siyyan Himar is an uplifted ridge of fossil coral reef.

Between Ras Siyyan and the village of Moulhoulé the shore is mainly sandy and backed by the small massif of Ibira, culminating at 241m.

Climate and hydrology

The climate is hot and semi-arid with mean air temperatures varying between 25°C in winter and 35°C in summer. Rainfall is between 50 and 215mm per year, averaging 130mm. During the summer monsoon (approximately June to September) winds blow from west to east through the Gulf of Aden, taking warm surface waters offshore. These warm waters are replaced by cool, nutrient rich water from the depths of the Gulf of Aden and the Arabian Sea. This results in high pelagic primary productivity, measured as total pigment concentrations, extending from the Gulf of Aden northwards into the Red Sea to 19°N. During the winter monsoon (approximately October to May) winds blow from east to west, from the Gulf of Aden into the Red Sea. The movement of water as described, results in upwellings in the region of the Bab al-Mandeb providing the basis of the southern Red Sea fisheries. Seawater salinity varies from 36.5 ppt to 39 ppt depending on water flow, with mean surface water temperatures ranging between 25°C and 29°C.

Marine ecosystems, flora and fauna

About 30km from the northern border with Eritrea is the strait of Bab al-Mandeb, 29km wide, linking the Red Sea to the Gulf of Aden and the rest of the Indian Ocean. Its relative shallowness (100-130m deep) restricts the exchange of water between the two areas. Due to its unique geographical position the area is of great biological importance and much of the mainland and island coastlines are dominated by coral communities.

Coral communities

All of the islands and most of the mainland shore are fringed with coral communities growing at depths ranging between 1m and 45m. The total area of coral reef between Ras Siyyan and the islands is estimated to be at least 12km², representing a very high capital for tourism and fisheries. Corals are in pristine condition and show locally 100% live coral cover. Around the islands of Sept Frères, three coral biotopes are common including hard and soft corals on rock, on rock and sand, or on rock, sand and rubble.

Many *Acanthaster planci* (crown-of-thorns starfish) were evident during the 2002 MPA survey with aggregations of up to 400 animals. Large fully grown adult individuals (30 to 50cm diameter) dominated the population, although some juveniles as small as 15cm were also recorded. This highlights the possibility of a potential crown-of-thorns starfish outbreak at Sept Frères similar to those outbreaks reported in other parts of the Region.

² *Scoria*, rough masses resembling clinker formed by the cooling of volcanic material, with a light aerated texture.

Minimal incidence of coral disease was recorded, mainly white band disease and black band disease. There were no signs of recent bleaching events at the Iles des Sept Frères; however, coral mortality recorded at some sites could be attributed to past bleaching events.

Anchor damage due to fishing boats was observed, the most important being at Grande Ile. The corals are particularly vulnerable to anchor damage and if tourism, particularly dive tourism, is to be developed in the islands, moorings will have to be installed and strict no anchoring regulations enacted by law. Due to the small size of the islands and the fragility of the substrate any development on land could very quickly damage the surrounding ecosystems.

Table 6. Key habitats and characteristics of the proposed protected area

Location	Coral	Seagrasses	Mangroves	Other
Siyyan Himar Reef Moulhoulé	No survey	No survey	None	A nearby shipwreck is used as a dive site
Ras Siyyan	Discontinuous fringing reef with deep water channel; lagoon and extensive reef flat, <i>Acropora</i> and <i>Porites</i>	Thin algal mats and scattered patches of macroalgae including <i>Padina</i> , <i>Caulerpa</i> , <i>Sargassum</i> and <i>Turbinaria</i>	Crescent shape (20 to 180m width) around the inner lagoon - monospecific (<i>Avicennia marina</i>), <i>Rhizophora mucronata</i> recorded by local people but not present	Turtle nesting (N). Low fish abundance
Rhonda Dabali Ile Double	No survey	No survey	None	
Tolka Ile Basse	Fringing reef, rare reef flat; coral cover 32-66% (dominant <i>Acropora</i> and <i>Porites</i>), soft coral 12% coral gardens with 90% coral cover	Algae on reef flat and shallow rocks (algal turf)	None	Strong currents. High reef fish abundance
Kadda Dabali Grande Ile	Fringing reef; 7% dead coral colonies; locally high coral cover up to 90%, locally high coral mortality due to over frequentation - 50% due to anchor damage	Algae on reef flat and shallow rocks (algal turf)	None	Anchor damage. Turtle nesting (NE). Numerous reef and pelagic fishes
Horod Le Rhale Ile de l'Est	Fringing reef with very narrow and discontinuous reef flat; hard coral cover 44% (dominant <i>Porites</i> and <i>Acropora</i>), soft coral 9% (dominant <i>Xenia</i>)	Algae on reef flat and shallow rocks (algal turf)	None	Turtle nesting (N). High reef fish abundance
Rhonda Komaytou Ile du Sud	Some fringing, rare reef flat; hard coral cover from 13 to 64%, mean 47%	Algae on reef flat and shallow rocks (algal turf)	None	Very high reef fish abundance

Location	Coral	Seagrasses	Mangroves	Other
Hamra Ile de l'Ouest	Fringing reef important; hard coral cover locally more than 60% (dominant <i>Porites</i>), rare reef flat	Algae on reef flat and shallow rocks (algal turf)	None	High reef fish abundance, but some species in lower numbers than usual
Khor Angar and reef offshore (1.5km)	Hard coral communities dominated by <i>Acropora</i> and <i>Pocillopora</i> ; coral cover ranged between 10% and 55% with a mean value of 25%	Algae on shallow rocks	Important mangrove area (<i>Avicennia marina</i> and <i>Rhizophora mucronata</i>); mean tree density 790 trees/ha; mean/maximum height for <i>A. marina</i> 3.9m/8m, for <i>R. mucronata</i> 6.3m/12m	
Godoria	No survey	No survey	Important and healthy stand (<i>Avicennia marina</i> and <i>Rhizophora mucronata</i>); needs survey	

Fish, sea urchins, sea cucumbers and clams

The fish assemblages within the Sept Frères/Ras Siyyan region are highly diverse and include a combination of reef fish species endemic to the Red Sea and Gulf of Aden region.

During the underwater visual census in 2002, the most abundant species encountered within each family were as follows:

- Serranidae (groupers): *Cephalopholis miniata* and *Epinephalus tauvina*
Lethrinidae (emperorfish): *Lethrinus mahsena*, *L. variegatus* and *L. nebulosus*
Lutjanidae (snappers): *Lutjanus ehrenbergii*, *L. bohar* and *Macolor niger*
Haemulidae (sweetlips): *Plectorhinchus gaterinus* and *P. gibbosus*
Scaridae (parrotfish): *Chlorurus sordidus*, *Scarus frenatus* and *S. niger*
Acanthuridae (surgeonfish): *Zebrasoma xanthurum*, *Acanthurus gahhm* and *A. sohal*.

The most abundant species were members of the family Lutjanidae, followed in decreasing order by the Chaetodontidae, Scaridae, Serranidae, Haemulidae and Pomacanthidae (angelfish).

In addition, various benthic fauna were recorded. Species common to the islands included holothurians (sea cucumbers), echinoids (sea urchins: *Echinometra* was found around the islands and *Heterocentrotus* along the Ras Siyyan coastline) and *Tridacna* (clams).

Marine turtles

The sandy shores of the islands and of the mainland provide important nesting areas for marine turtles. The species known to occur in the area are all listed as endangered species in CITES Appendix VI. A detailed survey is needed, as marine turtles are occasionally hunted by fishermen.

Megafauna

Rare and highly charismatic megafauna and marine mammals occur in the area surrounding Ras Siyyan and the Iles des Sept Frères. These include whale sharks (*Rhincodon typus*) and

manta rays (*Manta birostris*) in addition to humphead wrasse (*Cheilinus undulatus*), sharks (Carcharhinidae), turtles, dolphins (Delphinidae, in particular spinner dolphin *Stenella longirostris*, bottlenose dolphin *Tursiops truncatus*, humpback dolphin *Sousa chinensis*) and dugongs (*Dugong dugon*). In particular shark breeding is known to occur in the Ras Siyyan Bay in October.

These species are of particular ecological value as well as being of particular attraction to recreational visitors. Regulations on the codes of conduct and behaviour of people when interacting with such wildlife need to be addressed and once in place, must be upheld to ensure that animals are not disturbed or removed from their natural habitat.

Marine flora: mangrove stands and seagrasses

Important and significant mangrove stands were recorded surrounding Ras Siyyan bay and at Khor Angar. Two species were present, with a noticeable loss of the more susceptible species (*Rhizophora mucronata*) in the area surrounding the bay and less so at Khor Angar. *Avicennia marina* was dominant throughout the stands. The mangrove areas are a crucial nursery habitat for fish. They also provide habitat for feeding, roosting and nesting birds, insects, crustaceans and molluscs. Human impacts around the mangrove stands included collection of wood for sale as construction material and fuel, and browsing by camels. Monitoring of the local use of the mangroves is necessary to ensure the sustainability of this resource. In addition to extraction and browsing by camels, mangroves are vulnerable to changes in water level and pollution. At present, reduced flow of seawater in both the bay and at the Khor Angar mangrove stands are thought to be the cause of tree loss. Any additional development in the area is likely to impact negatively on the stands.

Seagrasses were not recorded around the islands of Sept Frères. However, abundant seagrasses formed large beds in Ras Siyyan lagoon with four different species recorded, the most common being *Halodule* and *Thalassia* species. Local fishermen reported that one of the seagrass species was an important food source for dugong.

Terrestrial ecosystems, fauna and flora

Gazelles are present in the area and many tracks can be observed, in particular near the Ras Siyyan lagoon. Important numbers of camels, donkeys and goats can gather near the water point and in particular in Gaherré. Camels also feed on mangroves while goats climb on acacias trees. Dog tracks can also be seen, particularly around settlements. In addition, local fishermen have reported that a species of snake inhabits the island of Horod le Rhale (Ile de l'Est), the only island thought to have snakes, and that these feed on birds' eggs. Finally, large numbers of invertebrates can be found in the mangrove areas.

Avifauna

Due to Djibouti's proximity to Arabia, it is also an important migration route for birds traveling between Europe and the African continent. The islands, mangroves and shallow waters along the shores are key feeding and nesting areas for birds, particularly important during the migration seasons. Ospreys (*Pandion haliaetus*), herons (goliath heron *Ardea goliath*, reef heron *Egretta gularis*), sandpipers, crab plovers (*Dromas ardeola*), pelicans (pink-backed pelican *Pelecanus rufescens*), terns and gulls (brown booby *Sula leucogaster*, Hemprich's gull *Larus hemprichii*) have been recorded.

Special features and landscapes

The remains of the seven volcanoes (the six islands and Ras Siyyan) constitute a unique landscape. On the marine chart, four underwater structures could have the same origin. In terms of landscape, Kadda Dabali (Ile Grande) and Ras Siyyan are the most impressive.

1.3 Resource Use and Main Threats to Ecological Features

The main threats to the protected area are listed in Table 7:

Table 7. Current threats to the protected area

Threat	Description
Fishing	Illegal fishing mainly by Yemenis, sometimes by locals and tourists (spear fishing) and local over-fishing; potential development of commercial fishery or introduction of new techniques
Anchor damage	Anchoring on the reefs
Pollution from ships	Potential pollution from shipping accidents during the crossing of the strait of Bab al-Mandeb (the eastern limit of the protected area is at the border of the international maritime route)
Pollution from human activities	Pollution from local people and tourists on land or at sea, particularly litter such as plastic bags, cans, bottles, discarded nets
Pollution from military training	Pollution and physical damage from military training (remains, works, new tracks) destroying the landscape
Driving	Off-track driving destroying the landscape and the flora
Mangrove exploitation	Over exploitation of the mangroves for construction (poles), fuel wood, or for feeding camels
Shell collection	Shell collection by local people for sale to tourists
Disturbance of birds	Disturbance of birds on the islands
Crown-of-thorns starfish	Potential outbreaks of the corallivorous crown-of-thorns starfish

1.4 Cultural and Historical Features and Traditional Uses

There are apparently no important archaeological or historical sites, but the region has not been properly studied. The only record concerns Paleolithic remains in the area of the Massif of Guéini.

The area is used traditionally by herders from different tribes and there is a need for research into local customs and ways of life. Traditional crafts could also benefit from this research and the local population could benefit from sales to visitors.

Threats to cultural features

There is presently no apparent threat to cultural features but the development of tourism in the area could create problems. Local traditions must be respected during the implementation of the management plan.

1.5 Socio-economic Aspects

Population

The population of the Republic of Djibouti is estimated at about 600,000. Most of the population is located in the capital, Djibouti. The remainder of the non-nomadic population is split between two towns, Tadjoura and Obock and various scattered villages and settlements. The exact number of nomadic people is unknown.

The District of Obock is not densely populated. In the census of 1991, the population of the District was estimated at 45,000, with 30,000 residing in Obock. More recently the population of the city of Obock has been estimated at 10,000. The most important settlements along the coast are, from north to south:

- Moulhoulé - about 15km from the border with Eritrea and 7km north of the proposed protected area boundary,
- South of Ras Siyyan and north of the Khor Angar mangrove - the village of Tourbawad Hori (including a small school and a mosque) with about 200 people and a natural fishing boat shelter,
- Around the wells of Gaherré - an important point for cattle drinking,
- Obock - the capital of the district.

All six islands are uninhabited, although evidence of temporary camps and military activity is present, as it is along the coast. Inland, at the proposed western limit of the protected area are located the villages of Sédorré (with a school) and La'assa (with water). For the whole of the proposed protected area and its immediate surroundings, the population of Gaherré, Khor Angar, Ras Siyyan, Sédorré and La'assa, including nomadic people, is estimated at 4,500 inhabitants. However an official survey is needed to give an accurate figure.

Infrastructures

Access to Obock is possible from Djibouti by road (173km from Tadjoura), or by boat (from Djibouti, taking up to four hours). Obock harbour is equipped with a jetty and basic facilities. Godoria and Khor Angar on the coast and La'assa and Sédorré inland are accessible by tracks from Obock.

The representatives of the national administration could allocate suitable facilities (offices) in Obock for hosting the staff of the protected area.

Economic activities

The economy of the Republic of Djibouti is largely based on service activities connected with the country's strategic location, proximity to Arabian oil fields and status as a free trade zone in north-east Africa. Djibouti is both a transit port for the region and an international trans-shipment and refueling centre.

Tourism

Tourism is an option available to Djibouti that would diversify the economy, making use of the country's natural resources. The district of Obock could benefit from the development of tourism, in particular marine tourism, due to the quality of its coral reef and of its marine resources.

Tourism appears to be restricted to visits by dive operators based in Djibouti that confer few benefits to the local population. They use live-aboard boats to reach the islands and run camping trips to Grand Ile and Tolka. Recreational diving around the islands was also practiced by military personnel. To date, there is no infrastructure or facilities for land-based tourism in the area, with the exception of temporary shelters for fishermen.

The most obvious and immediate impacts attributed to tourism are anchor damage (no moorings are in place in the area) and litter. As mentioned previously, spear fishing is reported to be practiced by both tourists and others even though forbidden by legislation.

Terrestrial tourism is not significant, due to the difficulties involved in reaching Obock (mainly by boat) and the lack of facilities (water, lodgings, and 4x4 vehicles). Potential sites for the development of eco-tourism have to be studied and equipped. Existing traditional crafts could be reactivated by the presence of tourists.

Fisheries

At the national level, about 200 species of fish are caught in Djiboutian waters. The total catch of about 400 tons per year, the number of boats (about 100) and their size (most of them 8m long, maximum) are not presently a threat to the marine environment in general. However, specific areas near settlements may be locally affected. The proposed increase in fishing activity needs to be controlled in areas used by fish as breeding, nursery and feeding sites. The creation of marine protected areas can assist in this respect.

Within the district of Obock the only official unloading point for fish is Obock. However, there are several sheltered points on the shore where the fishermen gather to sell their catches (in particular in Moulhoulé, Ras Siyyan, Khor Angar and near Godoria). The number of local fishermen along the coast is estimated at 250, but the number of fishermen coming from Yemen with boats is estimated to be about 500, targeting high value items such as shark (for fins), and sometimes sea cucumbers.

The current level of artisanal fishing in Ras Siyyan bay and the surrounding area including the Iles des Sept Frères appears to be having minimal impact on the environment. Artisanal fishing is targeting some specific taxa such as the blue spot mullet (*Valamugil seheli*) in the lagoon of Ras Siyyan and lobsters usually near the fringing reefs.

Fishermen and divers note that the shark population has deteriorated dramatically over the last decade. This was reportedly due to the illegal shark fin fishery primarily carried out by Yemeni fishermen. The presence of the French Navy patrolling the waters around the islands over the last few months has reportedly helped to deter the previously prolific illegal shark fishery. By-catch in the form of dolphin and turtles may also be an additional problem associated with trawling by commercial fishing operations.

Agriculture

Grazing is the main activity in the area. It is a nomadic activity; during the hot season most of the animals gather near the remaining water points, one of which is in Gaherré. The livestock are composed of goats, sheep, and cows. Camels and donkeys are used for transport. Camel numbers are estimated to be 5000 and they remain, for most of the time, on the coastal plain. During the dry season they concentrate near the water points of Khor Angar, Gaherré and La'assa, and around the mangroves the only remaining source of food.

Along the coast agriculture is not developed due to the scarcity of water. The mangrove area is used for grazing, mainly by camels and for collection of wooden poles for construction and export to Yemen.

Trade

Trading between the local population and Yemenis occurs on a daily basis in the Ras Siyyan area. Sale of fresh fish, lobster and meat could be developed and become a greater source of income for the local fishermen and herders.

Others

Other activities in the area include military training, both national and international, based on land and at sea.

Threats due to socio-economic activities

The main threats from land and sea are similar to those described before and are listed in Table 8.

Table 8. Current threats to the protected area due to socio-economic activities.

Threat	Description
Fishing	Illegal fishing mainly by Yemenis, sometimes by local and tourists (spear fishing) and local over-fishing; potential development of commercial fishery or introduction of new techniques
Anchoring	Anchoring on the reefs
Pollution from ships	Potential pollution from shipping accidents during the crossing of the strait of Bab al-Mandeb (the eastern limit of the protected area is at the border of the international maritime route)
Pollution from human activities	Pollution from local people and tourists on land or at sea (plastic bags, cans, bottles, discarded nets)
Pollution from military training	Pollution and physical damage from military training (remains of shell casings, works, new tracks) destroying the landscape
Mangrove exploitation	Over exploitation of the mangroves for construction (poles) or for feeding camels
Construction	Uncontrolled construction
Driving	Off track driving destroying the landscape and the flora
Shell collection	Shell collection by local people for sale to tourists
Water	Lack of water resources as the demand will increase

1.6 Protected Areas Legislation and Administration

Legislation

The existing legal framework concerning protected areas needs some clarification and improvement as there is some overlap between Ministries and Authorities with the same purpose.

The main texts to consider are:

- Law 52/AN/78 of 09 January 1979 concerning the territorial sea, the contiguous zone, the Exclusive Economic Zone, the maritime boundaries and the fisheries activities;
- Law 159/AN/85-1L of 11 June 1985 for signature of the United Nations Convention on the Law of the Sea;
- Law 82/AN00-4L of 17 May 2000 organising the administration of the Ministry of Housing, Urbanism, Environment and Land Use Planning;
- Law 106/AN/00-4L of 29 October 2000 approving the Framework Law on Environment;
- Law 121/AN/01 of 01 April 2001 approving the National Action Plan for the Environment for the period 2001-2010;
- Law 142/AN/0164L of 01 October 2001 organising the administration of the Ministry of Agriculture, Livestock and Sea, in charge of Hydraulic Resources;
- Presidential Decree 2001-0098/PR/MHUEAT of 27 May 2001 approving the Strategy and National Action Programme for the Conservation of Biodiversity;
- Law 187/AN/02-4L of 15 December 2002 approving the Code for Fisheries.

There is a share of legal competence between the Ministries in charge of the environment and of agriculture. Even though the Law for organising the Ministry for Environment has been approved in 2000, the Law organising the Ministry of Agriculture, approved in 2001, includes a section related to the protection of the marine environment and more precisely for marine protected species and the creation of marine reserves (Chapter VII Articles 18 to 20). This forms part of the section on fisheries regulations. After the declaration of the protected area of Sept Frères-Ras Siyyan-Khor Angar and Godoria, strong cooperation between the two ministries will be necessary for the registration and participation of fishermen, for control on land and at sea and for monitoring catches. In addition, similar cooperation will be needed for the inventory of cattle, the registration of herders and other agricultural activities under the competence of the Ministry of Agriculture.

Responsible authority

National

At the national level, the main authorities in charge of the development of the network of protected areas are:

- The Prime Minister,
- The Ministry of Housing, Urbanism, Environment and Land Use Planning (MHUEAT) and its Direction of the Environment and Land Use Planning (DATE),
- The Ministry of Agriculture, Livestock and Sea, in charge of Hydraulic Resources and its Department of Maritime Affairs,
- The Navy from the Ministry of Defence,
- The National Authority for Tourism from the Ministry of Youth, Sports and Tourism.

The implementation of the national policy for the protection of the environment and for sustainable development of the country is under the responsibility of the Prime Minister, as there is a need for coordination and cooperation between several ministries.

Marine and coastal protected area management has to be based on a common decision between numerous administrations. There is a need to adjust some of the regulations to define the

competence of each administration and to coordinate the cooperation between all the relevant ministries. This can only be done if the structure (Authority) in charge of the management of the protected area is located at a high level in the State's administrative structure, usually directly under the Prime Ministry.

Regional

The District of Obock is under the responsibility of a Representative (Commissaire) of the Republic nominated by the Council of Ministers. As the representative of the Prime Minister, he is in charge of the coordination of the activities of all the line ministries and in particular regional branches of the Ministries of Environment, Agriculture (Fisheries) and Defense. The second entity is the Regional Council grouping the representatives of the different administrations and of the civil society.

Other authorities and stakeholders (national, regional, local, NGO)

The local fishermen are grouped in a cooperative. Also, there is an association grouping the Women of Obock. The herders are organised according to the traditional rights of the tribe and can be represented in meetings by the tribal leader.

The private tourism sector is only present at the national level in Djibouti, in particular the diving centre and the boat owners' associations.

Associated donor programmes

The only current donor programme is the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden, a project executed by the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) and funded by the Global Environmental Facility (GEF). One of the components of the project is the 'Establishment of a Regional Network of Marine Protected Areas'.

Others donors and international organisations are potentially interested in supporting the development of a network of protected areas in Djibouti in order to help alleviate poverty in the country.

2. GENERAL POLICIES AND MANAGEMENT STRATEGIES

One of the main objectives of the National Strategy and Action Programme for the Biodiversity of the Republic of Djibouti (Presidential Decree 2001-0098 of 27 May 2001) is to promote the creation of a national network of protected areas with the following components:

- Capacity building for protected areas management,
- Local community participation,
- Preparation and implementation of management plans,
- Monitoring and research,
- Development of ecotourism,
- Public awareness.

The objectives, goals, strategies, and policies for planning and managing the marine protected areas at the national level are in line with those defined at the regional level and quoted in the Regional Master Plan for the Regional Network of Marine Protected Areas (PERSGA/GEF 2002). The main objectives are as follows:

- To develop regional capacity in all aspects of MPA planning and management,
- To provide for the sustainable use of living marine resources,
- To support local and national economic and social development,
- To involve local communities and stakeholders as partners in MPA management,
- To conserve representative examples of the biodiversity of the Red Sea and Gulf of Aden,
- To conduct research and monitoring programmes for the benefit of MPA management,
- To enhance public awareness of the marine resources and biodiversity of the Red Sea and Gulf of Aden and the principles of sustainable use,
- To protect the unique cultural heritage of the marine and coastal environments of the Red Sea and Gulf of Aden.

In order to respect both the objectives of the country and of PERSGA, the management plan does not follow the PERSGA format exactly but adapts when necessary to the format adopted by the country. This will facilitate the declaration of the protected area and the implementation of the management plan.

The objectives of the management plan for the marine and terrestrial environment of Sept Frères-Ras Siyyan-Khor Angar and Godoria are to provide, at the same time, for the preservation and sustainable use of its natural resources, whilst improving the quality of life of the inhabitants and the image of the region and of the country.

2.1 Administration and Capacity Building

This section on administration and capacity building is the top priority for the Government of Djibouti. As part of the administrative system of the country, this section includes a number of sections from the management plan described in the Regional Master Plan prepared by PERSGA. These are capacity building, personnel and finance, infrastructure, and liaison with other Ministries (in particular Defense and Maritime Affairs).

Objectives	Goals	Strategies and policies
To develop national capacity in all aspects of protected area planning and management	Adopt legislation for the declaration of the area	Government to adopt the necessary legislation for the declaration and management of the protected area, including specific regulations for each human activity - EIA (Environmental Impact Assessment) procedures.
	Establish management system including all stakeholders	A management plan to be prepared and adopted for a period of 3 to 5 years. A system for monitoring and reviewing the management performance to be included in the management plan.
	Recruit and build the capacity of the staff	Staff to be recruited and trained in marine and coastal protected area planning and management and in the relevant aspects of biodiversity conservation, fisheries, tourism, public awareness and marine ecology. This training to occur through formal courses and on-the-job training by staff participating in surveys and monitoring programmes. Relevant and up-to-date technology to be used for planning and management, such as GIS and remote sensing and staff to be trained in the application of this technology.
	Establish and maintain the infrastructure and equipment	Proper facilities, including infrastructure and equipment to be provided for the management of the protected area.
	Identify sources of funding	Sources of funding to be identified and secured in order to properly and fully manage the protected area. Mechanisms for sustainable financing to be used to support the operations. Cost-recovery mechanisms to be used to restore the resources that are damaged by unlawful use.

2.2 Natural Resources and Resource Uses

As the management of natural resources needs proper planning at the national level, zonation of the area falls under the responsibility of the Central administration and is included as a first step in this section.

Objective	Goals	Strategies and policies
To conserve representative samples of the range of habitats, communities, species, landscapes, seascapes and the ecological processes upon which each of them depend To provide for the sustainable use of living marine resources	Develop and implement zoning of activities in order to protect the habitats and ecological processes that sustain living marine resources at all stages of their life cycles	Habitats critical for the support of living marine resources, such as breeding and nursery areas, and larval sources, to be strictly protected; The use of living marine resources to be managed in consultation with local communities including the respect of traditional conservation practices
	Develop and implement regulations and reduce violations	Any human activity (such as tourism, fisheries and aquaculture) to be subject to specific regulations based on an EIA. Coastal alteration, discharges to the sea, collection of curios and any other activity that could damage the environment, species and natural resources to be strictly forbidden.
	Collect and share data on biodiversity including monitoring programmes (see Section 2.4)	Inventories of all species present within the MPA to be developed and stock assessments of key fisheries species undertaken; Stocks of key species caught within the MPA to be monitored using standardised techniques, to evaluate the effectiveness of management strategies.
	Prepare contingency planning (damage assessment, restoration)	Contingency plans to be prepared and responsibilities to be shared with the relevant authorities.

2.3 Community Participation and Local Community Support

The province of Obock is not very densely populated and the local community within the protected area is not numerous, being composed of disadvantaged people involved in fisheries, agriculture and cattle farming. The creation of a protected area could assist in the socio-economic development of this population.

Objective	Goals	Strategies and policies
To involve local communities and stakeholders as partners in MPA management	To involve the local community and stakeholders, in a participatory manner, in the development of management plans and in day-to-day management activities of the MPA	Local community members and stakeholders (or their representatives) to be invited to review and comment on draft zoning plans, management strategies and available information about the MPA
	Support sustainable use of natural resources	Traditional and sustainable use of natural resources to be promoted in particular in relation to fisheries and wood collection
	Improve the quality of life of the local population	Local community members to be trained to undertake tasks that support the management of the MPA, such as community ranger duties, the collection of fisheries data, monitoring of key groups of flora and fauna, liaison with tourists
	Promote research on traditional knowledge	Research to be promoted on traditional knowledge and use of natural resources

2.4 Monitoring and Research

Apart from some recent baseline studies, knowledge about this area is inadequate. Monitoring and research programmes are required. As the national capacity for research is not strong, it is important to develop regional and international support for these activities.

Objective	Goals	Strategies and policies
To conduct research and monitoring programmes for the benefit of MPA management	Develop and implement monitoring programmes for key indicators and undertake regular evaluations of management against performance targets	Monitoring programmes to target the status of habitats, key fisheries species, marine turtles, seabirds and marine mammals; standard monitoring techniques to be used and the programmes to have an appropriate statistical design incorporating levels of detectable change; Databases to be created and transferred if possible to GIS; Results of monitoring to be compiled, reported annually and compared against performance targets during the evaluation and review process; Results of the monitoring and research programmes to be made available to managers and to be included in public awareness programmes to demonstrate the benefits arising from the MPA; Reference locations for monitoring and research to be established.
	Promote and facilitate cooperation for research	Programmes of applied research to be developed, promoted and facilitated to support management, in consultation with national and international universities, researchers or students.

2.5 Tourism and Ecotourism

Tourism and ecotourism are a priority for the Government of Djibouti. Ecotourism is considered a potential source of revenue involving low investment and potentially little damage to the environment.

Objective	Goals	Strategies and policies
To support the socio-economic and sustainable development of the area through an ecotourism programme	Develop an ecotourism programme	An ecotourism programme to be elaborated taking into account the specificities of the protected area (marine and terrestrial) and involving, as far as possible, the local communities.
	Implement the marine ecotourism programme	The marine component of the ecotourism programme to be implemented, and to include the adoption of a code of conduct at sea, the installation of facilities at sea such as moorings and of infrastructure on land, in order to provide suitable information and education to visitors.
	Implement the terrestrial ecotourism programme	The terrestrial component of the ecotourism programme to be implemented and to include the adoption of a code of conduct with operators, the definition of accessible areas and the provision of infrastructure and facilities for visitors (including information and educational material).

2.6 Public Awareness and Education

This section is considered as one of the most important as it will generate local support and will help to educate national and foreign visitors. The support of volunteers and of international programmes will be necessary.

Objective	Goals	Strategies and policies
To enhance public awareness of the value of marine resources and biodiversity in the protected area and the principles of sustainable use	To develop public awareness programmes for the local community, all stakeholders and visitors	The public awareness programme to provide suitable information on the roles, functions and benefits of the protected areas to local communities and stakeholders. The public awareness programme to include guidelines for recreational users to avoid damage to coral reefs through anchoring, littering, reef walking and diving.
	Develop and implement an education programme	Visitor centres and field facilities to be used for educational purposes. Specific locations that demonstrate ecosystems, habitats and/or species to be equipped to promote visitor access and provide information.
	Provide opportunities for volunteer programmes	Volunteers to be encouraged to participate in management, public awareness and education programmes.

3. MANAGEMENT PLAN

This management plan is based on an analysis of the present situation and on an agreement to zone activities for nature conservation and for sustainable use. It is constructed around a set of functionally based action plans that outline how the protected area will be managed for the next five years. Each action plan outlines the different strategies that will be conducted and presents provisional activities for each of them.

Present situation: important and critical issues

The existing and potential threats to ecological resources (related to natural phenomena or to socio-economic activities) and the existing and potential opportunities for socio-economic development of the area are considered as priorities in the management plan. The following threats have been identified for the respective environments:

Marine environment

- Fishing - illegal fishing mainly by Yemenis, sometimes by locals and tourists (spear fishing),
- Localised over-fishing,
- Potential development of commercial fishery or introduction of new fishing techniques,
- Anchoring on the reefs,
- Pollution and litter from boats, local people and tourists (plastic bags, cans, bottles, discarded nets),
- Potential pollution from shipping accidents during the crossing of the strait of Bab al-Mandeb (the eastern limit of the protected area is at the border of the international maritime route),
- Shell collection by local people for sale to tourists,
- Outbreak of crown-of-thorns starfish.

Terrestrial environment

- Lack of water resources,
- Uncontrolled construction,
- Over exploitation of the mangroves for construction (poles) or for feeding camels,
- Over grazing,
- Pollution and litter generated by local people and tourists on land (plastic bags, cans, bottles, discarded nets),
- Disturbance to nesting and roosting birds on the islands,
- Absence of marked tracks - cars are driven everywhere, destroying the vegetation and the landscape,
- Pollution and physical damage from military training (remains such as shell casings, works, new tracks) causing damage to the landscape.

The main constraint on any existing and new activity is the lack of freshwater resources.

Development strategy and development planning, procedures and policy

Based on the identified threats and constraints, the proposed development actions for the area are described according to the proposed zoning. Further below, the necessary legislation, administration, staff, infrastructure and equipment will be described.

Planning of Activities

The management plan includes six action plans:

1. Administration and Capacity Building (ADM),
2. Natural Resources Conservation (NRC),
3. Local Community Support (LCS),
4. Monitoring and Research (MR),
5. Tourism and Ecotourism (TET),
6. Education and Public Awareness (EPA).

The strategies and activities for each action plan are listed in Table 9, and described in more detail in the following sections.

Table 9. Strategies and activities for each Action Plan for the protected area

Action Plan	Strategies and activities
Administration and Capacity Building ADM	ADM1 Adopt legislation for the declaration of the area ADM2 Establish management system including all stakeholders ADM3 Recruit and build capacity of the staff ADM4 Establish and maintain the infrastructure and equipment ADM5 Identify sources of funding
Natural Resources Conservation NRC	NRC1 Develop and implement zoning of activities NRC2 Implement regulations and reduce violations NRC3 Collect and share data on biodiversity NRC4 Contingency planning (damage assessment, restoration)
Local Community Support LCS	LCS1 Support sustainable use of natural resources LCS2 Improve the quality of life of the local population LCS3 Promote research on traditional knowledge
Monitoring and Research MAR	MAR1 Develop and implement monitoring programmes MAR2 Promote and facilitate cooperation for research
Tourism and Ecotourism TET	TET1 Develop an ecotourism programme TET2 Implement the marine ecotourism programme TET3 Implement the terrestrial ecotourism programme
Education and Public Awareness EPA	EPA1 Develop and implement an education programme EPA2 Develop and promote a public awareness programme EPA3 Provide opportunities for volunteer programmes

3.1 Administration and Capacity Building Action Plan (ADM)

The following sections provide for legislation, national and regional (district) administration, staffing, infrastructure and equipment needs for proper management. A more comprehensive description can be found in Appendices I and II.

Legislation (ADM1)

In addition to the existing laws and regulations, a proper legal framework must be developed to ensure that enforcement of regulations is possible and adhered to. In particular, the legislation will cover biodiversity and natural resources conservation and human activities such as fisheries, natural resources exploitation and tourism. Specific action for the reduction of marine pollution will be coordinated with the existing international instruments. A copy of the latest legal instrument is attached as Appendix I.

The main activities are to:

- Prepare and facilitate the approval of the necessary legislation,
- Define the responsibilities, roles and functions of the different administrative bodies.

Administration (ADM2)

A proper administrative system has to be developed at the regional and local levels in close coordination and cooperation with the existing central level.

The main activities are:

- Define, agree upon and install the Steering Committee,
- Enhance collaboration with and cooperation between the relevant national administrations.

A Steering Committee will be the main administrative authority for the operation and management of the protected area. This Committee will need to include national, regional (district) and local stakeholders (private and organisations) in order to facilitate the implementation and adjustment of the management plan. The Steering Committee will approve the annual work plan, and the annual report on technical and financial aspects.

Staff (ADM3)

The identification, selection and recruitment of experienced staff is essential for the success of the protected area. The main activities will be to:

- Define the necessary staffing requirements at the central and local area levels,
- Select and recruit staff according to the priorities,
- Develop and implement a comprehensive staff training plan,
- Provide the necessary facilities and equipment.

For the initiation of each protected area, the central administration, located in Djibouti, will play an essential role in the development of the local protected area, in particular for administration and legal affairs. The existing staff of the DATE (Direction de l'Aménagement du Territoire et de l'Environnement) will run most of the operations, from protected area declaration to the recruitment of the first new staff.

The local staff for the protected areas of Sept Frères-Ras Siyyan-Khor Angar and Godoria will be located in Obock, preferably within the district administrative building and/or near the harbour. Local staff will be allocated to the field as needed and in particular for long-term surveys. A position in Khor Angar looks suitable as a central point for all activities.

Over the long term, in order to avoid duplication and to coordinate activities, the Legal Office, Biodiversity, Monitoring, and GIS Units will remain in Djibouti city; they will coordinate

and follow up activities, receiving information and building databases. The central office in Djibouti will also be in charge of the collection of fees and the issuance of tickets for entrance by sea or by land for all departures from Djibouti. This will primarily involve tour operators and dive centre operators. Local officer(s) will be based in Obock. As needed, entrance fees will be collected at the local level by the Obock office for local tour operators and private individuals wishing to visit the protected area, the islands and the mangroves.

The total number of staff required at the central level is about 10; five are already present. The recruitment schedule is - one new member for the first year, two in the second year, and two for year three. At the local level, 14 fully trained staff members will be needed. The recruitment schedule involves hiring five persons in the first year, eight in year two and one for year three according to development progress. Staff will be trained as required.

Appendix II provides tables with complete descriptions of staff functions and positions, together with a job description for all units.

Infrastructure and equipment (ADM4)

The success of the protected area is also dependent upon the existence of proper facilities (headquarters and field offices) and upon the provision of the necessary equipment. The activities planned are:

- Identify, prioritise and prepare infrastructures,
- Identify, prioritise and fulfill equipment needs.

Within the central office, space is available for the DATE but the increase in number of staff and the need for a Protected Area Office will necessitate additional space and equipment. The creation of additional units such as the Biodiversity, Monitoring, GIS, and EIA Unit, and of the Education and Public Awareness Unit needs to be considered as soon as possible.

At the local level everything needs to be provided, including the local office, the field office, the field infrastructure (entrance gate, signs, visitors' centre), the marine infrastructure (marker buoys and mooring buoys), and field equipment (vehicle, boat, GPS, binoculars). A detailed description of all requirements is urgent.

Source of funding (ADM5)

The creation of a local and field operative structure for the protected area requires the preparation of budgets and the acquisition of funds. The following activities must be carried out:

- Preparation of a budget for the creation of the protected area,
- Preparation of a budget for the annual running costs of the protected area,
- Preparation of an evaluation of the available resources (government) and of the potential income,
- A search for alternative sources of funding.

The preparation of an accurate budget for the creation of the protected area is needed by the government and by potential donors and supporting organisations. As soon as the protected area is officially declared, there is the potential for support from international organisations (Global Environment Facility GEF - World Bank, UNEP, UNDP), through bilateral cooperation (GEF France, other embassies), from international non-governmental organisations or even from universities for research activities. Specific documents will have to be prepared (including a portfolio of projects) for presentation to potential donors.

3.2 Natural Resources Conservation (NRC) Action Plan

NRC1: Zoning of activities

The proposed marine zoning takes into account the existing situation as well as the results of surveys and discussion with the local fishermen and the diving centre association. As far as possible, the area is shared between fishing activities and tourism. When necessary these activities are separated.

Table 10 and the related maps illustrate a marine zoning plan for the Northern Shore (Figure 4a), for the Southern Shore (Figure 4b) and for the Offshore Area including the six islands (Figure 4c). It is based on the marine and coastal features (the mangrove is considered as marine) and describes the proposed activities, their regulations and the necessary infrastructure.

Table 10. Proposed marine zoning and activities in the protected area

Location	Special marine features	Mangroves	Activities	Infrastructure
North Shore	Sandy shore; marine turtle nests	None	Recreation and fishing	None
Siyyan Himar Reef, Moulhoulé	Survey to be completed; nearby shipwreck is a dive site	None	Recreation and fishing	None
Ras Siyyan Lagoon	Concentration of mullet; breeding ground for sharks	Crescent shape around the inner lagoon – monospecific (<i>Avicennia marina</i>)	Recreation and fishing	Option for mooring for small glass bottom boat
Ras Siyyan eastern shore and offshore	Discontinuous fringing reef with deep water channel; lagoon and extensive reef flat; seagrasses patches; turtle nesting		Recreation only	Delineation sign (land) or buoy (sea)
Hamra Ile de l'Ouest	Important fringing reef; high abundance of reef fish	None	Closed area	Delineation/marker buoys (4)
Rhounda Dabali Ile Double	Survey to be completed	None	Recreation and fishing No landing	Heavy duty mooring (1) for three boats Mooring for small boat (3)
Tolka Ile Basse	Fringing, rare reef flat; coral cover 32-66%; coral gardens with 90% coral cover; high reef fish abundance	None	Recreation only No landing	Heavy duty mooring (1) for three boats Mooring for small boat (1)
Kadda Dabali Grande Ile	Fringing reef; locally high coral cover up to 90%; anchor damage; turtle nesting (NE); numerous reef and pelagic fishes	None	Recreation on the eastern side Recreation and fishing on the western side	Heavy duty mooring (1) for three boats Mooring for small boat (1)

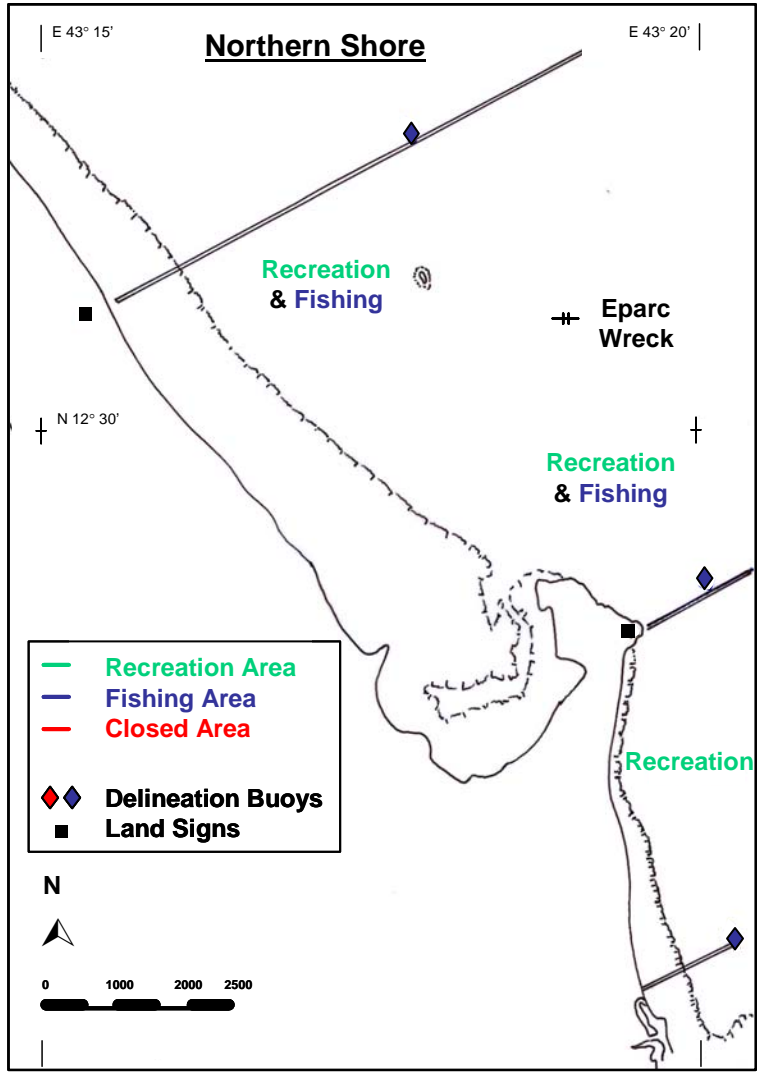
Location	Special marine features	Mangroves	Activities	Infrastructure
Horod Le Rhale Ile de l'Est	Fringing reef; very narrow discontinuous reef flat; turtle nesting (N); high reef fish abundance	None	Recreation and fishing No landing	Heavy duty mooring (1) for three boats Mooring for small boat (1)
Rhounda Komaytou Ile du Sud	Some fringing reef, rare reef flat; very high reef fish abundance	None	Recreation only No landing	
Khor Angar and reef offshore (1.5km)	Hard coral communities; coral cover from 10% to 55%	Important mangrove area (<i>Avicennia marina</i> and <i>Rhizophora mucronata</i>).	Recreation and fishing	Marker buoys (2)
Kadda Guiéni Outcrop to Godoria	Survey to be completed	Important and healthy stand (<i>Avicennia marina</i> and <i>Rhizophora mucronata</i>); needs survey	Recreation and fishing	Marker buoys (2)

Table 11 and the related maps provide a marine zoning for the Northern Shore (Figure 4a), for the Southern Shore (Figure 4b) and for the Offshore Area (Figure 4c) including the six islands based on the marine and coastal features (the mangrove is considered as marine). They describe the proposed activities (and related regulations) and the necessary infrastructure.

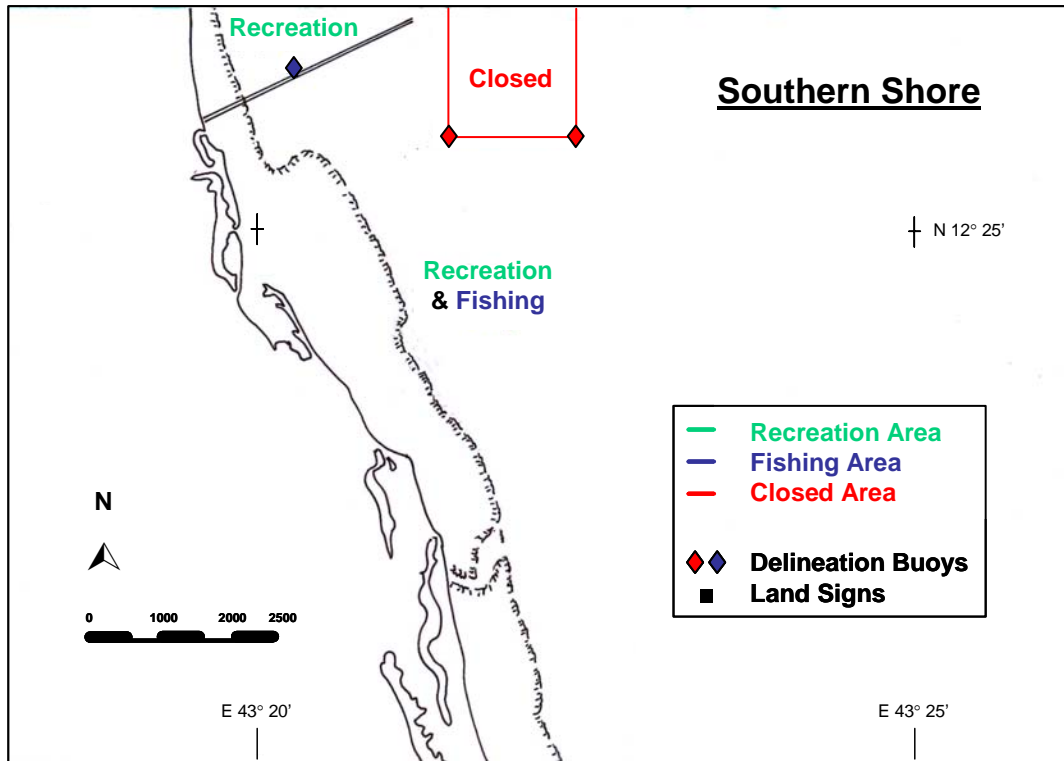
Table 11. Proposed terrestrial zoning and activities in the protected area

Location		Potential activities	Infrastructure
Northern Entrance	(Ouakirou)		Entrance gate, track system, direction and information signs, shelters
North of Ras Siyyan	Survey to be completed	Ecotourism	Track system, direction and information signs, shelters
Ras Siyyan	Survey to be completed	Ecotourism with field information centre and eco-lodge	Track system, direction and information signs, shelters and toilets
Khor Angar village	Survey to be completed	Visitor centre with exhibition, traditional eco-lodge, cafeteria, shop run by locals	Visitor centre, provision of fresh water (solar desalination), shelters and toilets
Khor Angar mangrove	Survey to be completed	Ecotourism	Visit by land on pathway
Inland	Survey to be completed	Traditional nomadic grazing Trekking (nature trail)	Track system, nature trail, direction and information signs, shelters
Western entrance	(La'assa/Sédorré)		Entrance gate, track system, direction and information signs, shelters
Southern Entrance	(Doubiya)		Entrance gate, track system, direction and information signs, shelters

a.



b.



c.

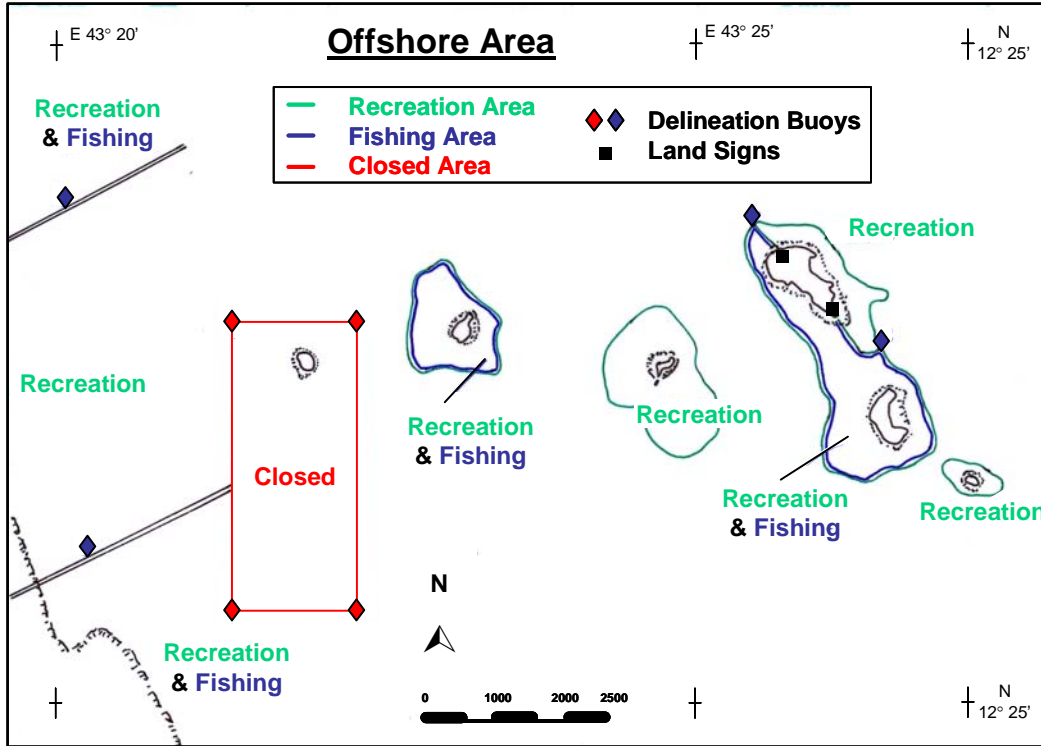


Figure 4. Zonation of the protected area; a. Northern shore; b. Southern shore; c. Offshore area

NRC2 Implement regulations and reduce violations

The long-term success of the protected area is dependent upon proper respect being shown to the regulations and the development of new regulations when needed. The main activities will focus on:

- Informing stakeholders and the public about existing regulations,
- Maintaining enforcement operations, patrolling to deter violations,
- Setting up a standard system for violation reporting, databases and court case follow up,
- Developing a compensation system for any environmental damage caused.

NRC3 Collect and share data on biodiversity

One of the most important requirements for the protected area is to identify and evaluate the status of natural resources, habitats, ecosystems and species. Daily patrols and specific missions within the protected area will allow managers to:

- Assess and monitor status of previously identified natural resources,
- Record additional natural resources and natural events.

NRC4 Contingency planning (damage assessment, restoration)

As part of the National Planning Response for emergencies, coordination and definition of the roles of the National Protected Area Network is needed. A contingency plan will provide the basis under which agencies and individuals respond to oil spills, chemical releases, vessel groundings and other events which may threaten natural resources and human life. At the international level, the International Maritime Organisation (IMO), acting as the Secretariat of the UN Convention on the Law of the Sea, delineates international maritime routes (such as Bab al-Mandeb). It also includes Sensitive Sea Areas (protected areas) in navigation instructions and provides support for preparing contingency planning and training staff on emergency responses. The main activities to be conducted, mainly at the central level are to:

- Coordinate with national and international authorities for emergency responses at sea and on land,
- Define the roles and functions of the National Park System in cases of emergencies (pollution, natural event);
- Promote volunteer support for marine, coastal or inland clean-up campaigns.

3.3 Local Community Support (LCS) Action Plan

Local community involvement in protected area management and in particular, the economic return related to the creation of the protected area, is one of the keys for its success. Their participation in the nature conservation process, the respect of their traditional uses and the impact on their quality of life will turn them from skeptics to supporters.

LCS1 Support sustainable use of natural resources

The main activities proposed under this strategy are to:

- Support the development of sustainable fisheries,
- Control natural resource exploitation (in particular grazing and mangroves).

An effective fisheries management plan for sustainability of the reef fisheries, including no-take fisheries reserves, is of paramount importance. A detailed plan will need to be prepared.

Resource exploitation, such as mangrove use and grazing, needs to be evaluated and if necessary a control system will need to be set up.

LCS2 Improve the quality of life of local population

The main activities proposed under this strategy are to:

- Improve freshwater provision,
- Develop a health support programme.

The improvement of freshwater provision for local people and, at a later stage for visitors, using solar energy and evaporation is possible. A preliminary test needs to be conducted.

The protected area management could, with the Ministry of Health or other specialised organisations, arrange regular visits to the main settlements in the area in order to provide or train local people in First Aid, health care and hygiene.

LCS3 Promote research on traditional knowledge

The main activities proposed under this strategy are to:

- Develop research on and reactivate local craft production,
- Develop research and promote the use of medicinal plants,
- Reactivate other traditions.

The traditional knowledge of local inhabitants, in particular, craft production and the use of medicinal plants, needs to be recorded and reactivated. This will benefit future generations and will have a direct impact on the local economy during visits by tourists.

3.4 Tourism and Ecotourism (TET) Action Plan

The main potential for additional or new income for local inhabitants is the development of sustainable tourism, in particular, ecotourism.

TET1 Develop an ecotourism programme

Surveys have shown that the relationship between locals and tourists is less for offshore marine tourism. However, the development of terrestrial and, in particular, coastal tourism has notable potential. The main activities under this strategy are:

- To survey the area and define potential activities and sites in the area,
- To analyse the potential impacts on culture, social structure and economy,
- To prepare an investment plan for the development of ecotourism and search for funding.

TET2 Implement the marine ecotourism programme

Marine ecotourism usually starts from Djibouti but in the future it could start from Obock. The main activities are to:

- Define and install the necessary infrastructure to protect the reef, such as moorings,

- Prepare and distribute the necessary information (leaflets) for marine ecotourism.

TET3 Implement the terrestrial ecotourism programme

Terrestrial and coastal ecotourism will certainly have a strong impact on the local economy. The main activities are:

- Defining and prioritising the potential sites and the standards to be respected,
- Installing the necessary infrastructures according to the necessary standards (toilets),
- Preparing and distributing the necessary information for terrestrial ecotourism.

3.5 Monitoring and Research (MAR) Action Plan

Long term monitoring and research oriented to management issues are essential to achieving the protected area's primary goals. A baseline study has been realised for the marine environment, but there is insufficient data on the terrestrial environment, on cultural features and on socio-economic aspects.

MAR1 Develop and implement monitoring programmes

Monitoring is a major tool to assist in the management decision-making process and to provide support for education and public awareness. It includes the following elements:

- Monitoring natural resources, species and human activities at sea and on land,
- Creating and maintaining a data and information system to store monitoring results,
- Facilitating communication with the education community, user groups and the public.

Table 12 provides recommendations for monitoring that will give information on biodiversity and resource use that is valuable for management decision-making. Other subjects could be considered such as an archaeological survey but priority should be given to the topics listed in the table.

Table 12. Recommendations for monitoring

Monitoring	Importance for biodiversity	Importance for management
Coral reefs	List and quality; monitoring by quadrat and transect (video) in closed areas	Monitoring by quadrat and transect in open areas for diving, snorkeling, mooring, etc.
Fish	List and abundance; fish counting in closed areas	List and abundance; fish counting in open areas; catch follow up (species and size; over-fishing)
Turtles	List of species and nesting, breeding, and feeding sites	Hunting, disturbance, impacts from pollution
Dugongs	Sightings of presence, number	Hunting
Seagrass	Species and areas; breeding ground or nursery for other species; feeding grounds for high profile species	Close activities during breeding or nursery periods
Mangroves	Species and status; shelter, breeding ground or nursery for other species	Evaluate exploitation impacts; if necessary close access or activities

Monitoring	Importance for biodiversity	Importance for management
Marine pollution	Origin of pollution; potential impact on species, ecosystems and habitats	Prepare contingency plan; develop clean-up operation for solid waste
Flora (terrestrial)	Need a complete survey, in particular, for endemic or rare species	Endemic and rare species to be protected by closing some areas to grazing
Fauna (terrestrial)	Need a complete survey for the status of all species	Areas could be closed to reduce hunting pressure or during breeding periods
Birds	List and number	Reduce hunting and close areas during breeding, migration or presence of juveniles
Cattle	List and number	Impact on ecosystems and wildlife (disease)
Feral animals	List and number	Impact on biodiversity
Freshwater	Quality and quantity	Needs (seasonal), use
Population	Census	Settled, nomadic, use of resources
Traditional use of natural resources	Targeted species of biodiversity and flora for craft, medicinal plants or other uses	Limit or stop the potential impact on species and resources; start restoration programmes

The data and information system will be the responsibility of the Monitoring, GIS and EIA Unit at the central level in Djibouti. A proper communication system will need to be developed.

MAR2 Promote and facilitate cooperation for research

Research in a protected area has to be a tool for management decision-making. The Steering Committee and the management team at the central and local level will decide on priority research projects. For projects proposed by other organisations, NGOs or researchers, the management team will decide upon the need for such research and will have a formal agreement with the potential partner. A standard form for this agreement is provided in Appendix IV.

The main activities identified are to:

- Establish administrative procedures for identification, selection and management of research projects,
- Include research results in the central data and information system,
- Facilitate communication with the research community, user groups and the public.

The potential needs for research activities will be identified at a later stage.

3.6 Education and Public Awareness (EPA)

Education and Public Awareness programmes are needed for the immediate and long term effectiveness of protection. Three programmes have been identified.

EPA1 Develop and implement an education programme

The objective of the education programme is to inform, and at present its programme will focus on the following activities:

- Identify and evaluate the needs, opportunities and roles of an education programme,

- Develop a strategic plan for implementation of the educational programme,
- Contact local and national authorities to develop a participatory process for educational purposes (teachers, schoolchildren, students, visitors, administration),
- Prepare the necessary documentation (for exhibitions, workshops, seminars and training sessions).

EPA2 Develop and promote a public awareness programme

A public awareness campaign at the national and international level will allow the public to know more about the efforts of the country in promoting nature conservation and sustainable development. This will increase the number of visitors and will support the development of cooperative programmes. The following activities have been identified:

- Identify the potential partners for public awareness (national and international media),
- Develop a plan that describes strategy and actions to develop public awareness,
- Prepare the necessary documentation (articles, photographs, videos, etc.).

EPA3 Provide opportunities for volunteer programmes

One of the most effective aspects of education and public awareness is to receive volunteers (nationals or foreigners) participating in the daily activities or specific actions. This also provides support to the staff. The main activities will be to:

- Identify and provide opportunities for volunteer participation,
- Develop a plan that describes the strategy and actions to enlist the aid of volunteers,
- Prepare the necessary documentation for education programmes (handbook, lectures, leaflets, etc.).

As the participation of volunteers needs to be in accordance with specific regulations, a standard document for agreement of volunteers is provided in Appendix V.

Review Strategy

Adaptive management is based on an interaction between the existing management and the results of monitoring or exceptional events. The decision has to be fast and effective. This means that change in the management will need to be at the protected area level, keeping the central level informed in real time of any changes.

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APPENDICES

Appendix I. Legislation Declaring the Area Protected

**REPUBLIC OF DJIBOUTI
UNITY-EQUALITY-PEACE**

PRESIDENCY OF THE REPUBLIC

**LAW No.
Establishing Terrestrial and
Marine Protected Areas**

**THE NATIONAL ASSEMBLY ADOPTED
AND THE PRESIDENT OF THE REPUBLIC IS ENACTING
THE FOLLOWING LAW**

Having regard to the Constitution of September 15, 1992,

Having regard to Law No. 113/AN/96/3rd L of September 1996 ratifying the Convention on Biological Diversity,

Having regard to Law No. 82/AN/00/4th L of May 17, 2000 organizing the Ministry of Habitat, Urbanism, Environment and Land-Use Planning,

Having regard to Law No. 106/AN/00/4th L of October 29, 2000 establishing the Framework Law on Environment,

Having regard to Law No. 121/AN/01 of April 1, 2001 approving the National Environmental Action Plan 2001-2010,

Having regard to Law No. 149/AN/02/4th L of January 31, 2002 approving the economic and social orientation of the Republic of Djibouti,

Having regard to Law No. 186/AN/02/4th L of September 9, 2002 ratifying the Convention on Humid Zones/Ramsar Convention,

Having regard to Law No. 187/AN/02/4th L of September 9, 2002 establishing the Fishing Code,

Having regard to Decree No. 2001-0053/PRE of March 4 effecting appointment of the Prime Minister,

Having regard to Decree No. 2001-0098/PR/MHUEAT of May 27, 2001 approving the National Biodiversity Conservation Strategy and Action Plan

Having regard to Decree No. 2001-137/PRE of July 4, 2001, effecting appointment of the members of the Government and defining their responsibilities.

ARTICLE One: In application of the specific provisions:

- of the Convention on Biological Diversity, in particular as set forth
 - in its Paragraph 8a, stipulating that each Contracting Party shall “establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity” and

- in its Paragraph 8b, stipulating that each Contracting Party shall “develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity”;

- of the Ramsar Convention on Wetlands, in particular as set forth
 - in its Paragraph 4.1, stipulating that “each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the [Ramsar] List or not, and provide adequately for their wardening;
- of the Framework Law on Environment, in particular as set forth
 - in its Article 39, stipulating that “species and their habitats are provided special protection through the establishment of Protected Areas, lists of protected species and regulations pertaining to the introduction of any species, whatever its origin, which might be prejudicial to the species already established or their specific environments;

Terrestrial Protected Areas are hereby created on the sites listed hereinbelow:

- Forest of Day
- Forest of Mabla
- Lake Abhé
- Lake Assal

This list may be expanded at a later date by way of regulations upon proposal from the Minister in charge of environment, if the state of biodiversity so requires.

ARTICLE 2: The felling or pruning of all trees and the gathering or lifting of plants in Terrestrial Protected Areas are regulated and controlled by the Ministry in charge of environment, with the support of the line ministries concerned, in particular the Ministry of Agriculture, the Ministry of Tourism and the Regional Councils concerned.

Hunting is strictly prohibited in such areas.

ARTICLE 3: Marine Protected Areas are hereby created in the marine ecosystems listed hereinbelow:

- Musha and Maskali Islands
- Seven Brothers’ Islands as well as Ras Siyyan, Khor Angar and the Forest of Godoria
- Haramous

This list may be expanded at a later date by way of regulations upon proposal from the Minister in charge of environment, if the state of biodiversity so requires.

ARTICLE 4: Fishing activities, whatever their type, as well as diving activities in Marine Protected Areas are regulated and controlled by the Ministry in charge of environment, with the support of the line ministries concerned, in particular the Ministry of Agriculture, the Ministry of Tourism and the Regional Councils concerned.

The gathering of corals and sea-shells as well as underwater fishing are prohibited in such areas.

ARTICLE 5: Terrestrial and Marine Protected Areas do not constitute closed areas and access thereto is not prohibited. Traditional and small-scale animal husbandry and fishing activities as well as ecotourism are allowed but they are regulated and controlled with a view to preserving biodiversity.

ARTICLE 6: The local communities are closely involved in the management of protected areas and they are made aware of the importance of preserving biodiversity.

ARTICLE 7: The exact boundaries of the protected areas as well as the arrangements for their management will be specified by regulations.

ARTICLE 8: Violations of this Law shall be punishable as provided by the laws and regulations in effect in the Republic of Djibouti, in particular by the Framework Law on Environment.

ARTICLE 9: All previous provisions that are inconsistent with this Law are hereby repealed and of no effect.

ARTICLE 10: This Law shall be recorded and disseminated wherever necessary, and published in the Official Journal of the Republic of Djibouti. This Law shall be enforceable immediately upon its enactment.

Done in Djibouti, on

**The President of the Republic
Head of Government
ISMAÏL OMAR GUELLEH**

Note: This is not an official translation

Recommendations for articles to be included in subsequent regulations

Article 1 Purpose

These regulations are set forth in accordance with Articles 3 and 7 of the Law Number XXX signed by the President of the Republic on < DATE > to designate the protected area of Sept Frères-Ras Siyyan-Khor Angar and Godoria. The delineation of the area including a geographical and physical description is attached and constitutes an integrant part of this Decree.

Article 2 Definition

A protected area is defined as any area of land, sea, coastal or inland water characterised by flora, fauna and natural features having cultural, scientific, tourism or aesthetic value.

Article 3 Regulations

It is forbidden to commit actions or carry out activities which will lead to the disturbance, destruction or deterioration of the natural environment or harm the biota (terrestrial, marine or freshwater), or which will detract from the aesthetic standards within protected areas.

Specifically, the following acts are strictly prohibited:

- Hunting, transporting, killing or disturbing wildlife,
- Damaging or removing any living organisms or natural features and resources such as shells, corals, rocks or soil for any purpose,
- Damaging or removing plants,
- Spoiling or destroying the geological features (and other features) of sites serving as natural habitat and breeding areas for plant and animals,
- Introducing foreign (non-indigenous) species of biota into the protected area,
- Polluting the soil, water or air in any manner,
- Constructing buildings and establishments, paving roads,
- Driving vehicles out of the demarcated tracks

In addition, it is forbidden to carry out any other activity without the written permission of the responsible Administrative Body (see Article 5 below) for the protected area (central and local) in accordance with the rules and regulations and restrictions specified by the present decree.

Article 4

It is forbidden to carry out activities or experiments in the areas surrounding designated protected areas, which may have a harmful effect on the environment and nature of the protected area, except with the explicit permission of the Protected Area Administrative Body and in accordance with all other laws and regulations (e.g. EIA).

Article 5

The Administrative Body (responsible of the provisions of this decree) is at the central level the Ministry of Environment or the Authority for Protected Areas under the Prime Minister's office.

This Administrative Body is empowered to establish local offices within the districts where the protected areas are located and will be responsible for the following tasks:

- Managing and coordinating activities related to the protected area,
- Surveying and monitoring and recording of natural features and wildlife within the protected area,
- Guiding and educating the public about the natural resources within the protected area and the objectives and reasons for their establishment,
- Exchanging information and experience related to the protected area and natural resources with other countries and international organisations,
- Managing (operational) funds referred to in Article 6 below.

Article 6

A special fund will be established for the receipt of money, donations and grants to the protected areas, and admission fees (if applicable) as well as fines collected in accordance with the provisions of this decree. All the money received shall be collectively directed to the following purposes:

- Supplementing the budget of the Administrative Authorities implementing the provisions of this decree,
- Environmental improvement in the protected areas,
- Undertaking necessary monitoring and research studies in the field of the natural protected area,
- Remunerating officers and informers engaged in the enforcement of the provisions of this decree.

Article 7 Penalties

Unless a stronger penalty is specified by another law, any person who contravenes the provisions of Articles 3 and 4 of this decree will be punished by a fine of not less than ... and not more than and/or a prison sentence of not less than

In addition to this, the offender will bear the cost of the removal or reparation of any damage (including environmental damage) specified by the concerned Administrative Body or any of its local offices. The Administrative Body's representatives will be empowered to confiscate equipment, weapons or tools used in committing the offence.

Article 8

Fines and reparation costs will be instantly collected through the administrative channels.

Article 9

Competent officials of the concerned Administrative Body responsible for enforcing this decree will be designated in a decree (Order) from the Minister of Justice upon consultation with the concerned ministers, and shall be accorded magistrate level judicial powers concerning violations specified in this decree.

Article 10

Any legislation contrary to the provisions of this decree must be abrogated.

Article 11

This decree is to be published in the Official Gazette and will come into force from the date of publication.

Appendix II. Staffing

The following tables provide the position, the function and the recruitment schedule for the proposed staff. E denotes existing staff, and Y followed by 1, 2 or 3 denotes the year of recruitment for new staff. C indicates the position at the central level in Djibouti and L the position at the local level.

National Protected Area Administration in Djibouti		
<i>Position</i>	<i>Duty station</i>	<i>Function</i>
MANAGEMENT		
National Protected Areas Manager	C/E	Coordination of national protected areas Follow up of international affairs (conventions)
National Secretary	C/E	Secretariat
LEGAL OFFICE		
Lawyer	C/E	Convention, court cases
ADMINISTRATION		
Accountant Manager	C/E	Accounting procedures, income generation, staff registration and follow up
Accountant Assistant	C/Y3	Accounting procedures, store and inventory
Secretary	C/Y2	Secretariat
Cleaner/caretaker	C/E	All basic maintenance
SCIENTIFIC AND TECHNICAL		
Biodiversity and monitoring	C/Y1	
GIS specialist	C/Y2	
Public awareness specialist	C/Y3	

Obock District Protected Areas Administration		
<i>Position</i>	<i>Duty station</i>	<i>Function</i>
MANAGEMENT		
1 Manager	L/Y1	Coordination at local and national level, follow up the implementation of the management plan
2 Assistant Manager	L/Y2	As above and follow up of all the field activities
ADMINISTRATION		
Accountant/Personnel Manager	L/Y1	Accounts, personnel, stores, inventory
Secretary	L/Y2	Secretariat
Cleaner/caretaker	L/Y3	All basic maintenance
LEGAL OFFICE	See C	Support and follow up supplied by the Central Office
BIODIVERSITY MONITORING	See C	Support and follow up supplied by the Central Office
PUBLIC AWARENESS	See C	Support and follow up supplied by the Central Office

Obock Field Staff - Patrolling, Scientific, Monitoring and Veterinarian Services		
<i>Position</i>	<i>Duty station</i>	<i>Function</i>
MONITORING SEA		
Environmental Officer	L/Y1	Patrolling, enforcement and monitoring
MONITORING LAND		
Environmental Officer	L/Y2	Patrolling, enforcement and monitoring
VETERINARIAN SERVICES		
Veterinarian	L/Y3	Could be provided by the Ministry of Agriculture
COMMUNITY SERVICES		
Community Guard 1 (marine activities)	L/Y1	Fieldwork support; e.g. patrolling, monitoring, data collection
Community Guard 2 (land activities)	L/Y3	Fieldwork support; e.g. patrolling, monitoring, data collection

Obock Technical Support Services		
<i>Position</i>	<i>Duty station</i>	<i>Function</i>
MARINE UNIT		
Boat Captain and Diver	L/Y1	Boat captain for patrolling, enforcement and surveys; Professional diver: mooring installation and maintenance
Diver and Boat Mechanic	L/Y2	Boat mechanic; installation and maintenance of the mooring and demarcation buoys system; sampling for monitoring and research; data collection at sea
MAINTENANCE UNIT		
Workshop and Infrastructure Manager	L/Y1	Multi specialist in maintenance
Workshop and Infrastructure Assistant	L/Y3	Mechanic/Electrician and Driver
Driver	L/Y2	Drive heavy equipment and vehicles for field missions

General Tasks and Responsibilities

The following table provides detailed tasks and responsibilities for each manager or unit. The number between brackets is the number of staff allocated to the protected area, some of them from the central level in Djibouti (C), others from the local level (L).

CENTRAL UNITS	Function
Central Management and Secretariat (C2)	<p>The Central Management Staff are responsible for the coordination of the activities of all the management sectors, ensuring that they are properly staffed and that they receive full technical and administrative support from other units. The Local Management follows, updates and facilitates the preparation, improvement and implementation of the management plans in each protected area zone or activity.</p> <p>The Secretariat of the Local Management is responsible for the follow up and filing of any activity under the responsibility of the Local Management including all the activities developed by the Protected Areas Unit and the other units.</p>
Central Administration Unit (C4)	<p>The Administration Unit is responsible for accounts, salaries, staff affairs, purchases, stores and inventory. This unit is responsible for the collection of all income including entrance fees, sale of products and use (or rent) of the existing facilities (visitor centres, cafeterias, exhibitions, etc.). This unit is also responsible for the registration of diving centres, tour operators and for the development and update of a database on the different stakeholders.</p>
Central Legal Unit (C1)	<p>The Legal Unit is responsible for the preparation, delivery and follow up of violations occurring within the region, including the review of technical supporting documentation, the transmission of documents to the prosecutor and the follow up of court cases. In addition to the filing and follow up of all court cases, the legal unit will provide training to staff on matters related to legislation, regulation and enforcement. The legal unit will liaise with the Local Management.</p>
Biodiversity, Monitoring, GIS and EIA Review Unit (C2)	<p>The Monitoring Unit liaises closely with all others units of the region. This unit is responsible for the definition (planning) and implementation of resources monitoring programmes. Monitoring programmes are designed to assess the state of the environment, provide feedback to planners and managers and to evaluate the effectiveness of management policies. This unit is responsible for the preparation and update of databases on all the relevant fields. In coordination with the Local Management and the Protected Areas Managers, this unit provides support to surveys with the available expertise and equipment.</p> <p>Geographical Information Systems (GIS) are an important tool for the formulation of management decisions. GIS rely on information databases to be prepared and updated regularly. The GIS unit prepares and maintains a functional system to be available to managers and planners on demand. The GIS includes all available information on natural resource inventories, wildlife concentrations, development projects, resources monitoring, visitor distribution patterns, zoning, park infrastructure and other relevant information.</p> <p>The two primary functions of the EIA Review Unit are: (1) to carry out or contract EIA for activities or development within the boundaries of declared protected areas. (2) To review EIA documents forwarded from other authorities in adjacent areas or likely to have an impact on protected areas. In this case the unit assesses the EIA document, carries out field inspection and evaluation and returns the document to relevant authorities with recommendations and requirements. If agreed, the development or the activities are subject to follow up and monitoring.</p> <p>Follow up on development activities in adjacent areas likely to have an impact on protected areas is a permanent activity coordinated by this unit and the legal unit.</p>
Public Awareness Unit (C1)	<p>The public awareness unit implements the national policy for environmental matters developed and agreed by the Central Management. This unit is responsible for the design, testing and implementation of educational and information programmes dealing with natural resources conservation and management. The unit, in coordination with protected areas local managers, designs educational displays for the protected areas' visitor centres, prepares information packages and brochures, designs posters, animates public education events and develops teaching modules. Contact with the media is authorised by the Central and/or Local Management. The publications are standardised.</p>

LOCAL UNITS	Function
Local Management (L2)	The Local Management staff are responsible for the coordination of the activities of all the management units, ensuring that they are properly staffed and that they receive full technical and administrative support from the others units. The Local Management follows, updates and facilitates the preparation, the improvement and the implementation of the management plans of each protected area zone or activity, including planning, infrastructure, visitors, monitoring, patrolling, staff.
Local Administration (L3)	<p>The Local Administration Unit is responsible for accounts, income, staff affairs, purchasing, stores and inventory. This unit is responsible for the collection of all incomes including entrance fees, sale of products and use (or rent) of the existing facilities (visitor centres, cafeterias, exhibitions, etc.). This unit is also responsible for the registration of diving centres, tour operators and of the development and update of a database on the different stakeholders.</p> <p>The Secretariat (L1) of the local Management is responsible for the follow up and filing of any activity under the responsibility of the Local Management, including all the activities developed by the Protected Areas unit and other units.</p>
Community Services Unit (L2)	<p>The Community Services Unit is responsible for the development of activities related to the local communities, including liaison with responsible persons from the community, identification of needs, issues of concern, points of disagreement, and formulating and implementing effective responses. Activities are related in particular to health, water supply, fisheries, crafts, traditional knowledge and education. Staff come from the local communities with one person more oriented to social activities and one more oriented to marine and terrestrial activities.</p> <p>Any contact with the local authorities is done through the Local Management.</p> <p>Protected areas management principles require that local communities participate and benefit from the existence of the protected areas.</p>
Field Unit (L3)	<p>The Local Field Unit includes two environmental officers and one veterinarian. The two environmental officers, one oriented to marine activities and one to terrestrial activities, will have a scientific background and are in charge of the patrolling, enforcement and monitoring.</p> <p>The veterinarian, who could be seconded from the Ministry of Agriculture, is responsible for wildlife and cattle surveys. He is in charge of the care of injured wildlife and provides assistance to local communities for cattle health follow up.</p>
Marine Unit (L2)	The Marine Unit is responsible for the preparation and implementation of planning for marine activities, including marine patrols, dissemination of information to users, enforcement of protected areas regulations, search and rescue procedures, implementation of a dive site management plan, installation and maintenance of moorings, provision of support for marine monitoring or research, inspection of coastal development sites and the control and regulation of fishing activities. The Marine Unit reports and acts under the supervision of the Local Management.
Maintenance Unit Workshop and Infrastructure (L3)	<p>The Local Office will include vehicles, field and diving equipment, communication equipment, generators and other materials. The workshop section is responsible for the maintenance of all the listed equipment, including location, use, maintenance schedules, cost of repairs, fuel consumption, designated operator, and training for maintenance.</p> <p>The infrastructure section is responsible for the maintenance of all buildings and facilities at the local level and inside the protected areas (visitor centres, shelters, toilets, tracks, etc.).</p>

Appendix III. Usual and Alternative Sources of Funding

Some of the potential internal sources of funding from a protected area are listed below:

- Entrance fees for the protected area,
- Sales of products from the protected areas (a long list and different approaches can be chosen, but the main element is the quality of these products, including eco-labeled products),
- Direct user fees linked to existing facilities such as lodges, eco-lodges, restaurant/cafeteria to be paid by companies authorised to enter the area, based on an annual fee or any other system,
- Direct user fees for other activities acceptable within the protected area (according to EIA, zoning and any other consideration such as national priority) -this can include, in our case, aquaculture at sea or on land, quarry and mining,
- Indirect user fees such as the tourism industry of the surrounding area, the travel companies selling the park or the parks of the country,
- Official charges for visas, for entrance into the country,
- Fines and penalties from violations inside the park or within adjacent areas,
- Research activities licensing (in particular biodiversity and biotechnology).

Appendix IV. Research Agreement with an Institution

PROTOCOL between the Environmental Authority and the (University, Research Centre, etc.)	
INSTITUTIONS INVOLVED (list)	
BACKGROUND PURPOSE	
EXTENT OF THE (University) PROGRAMME PARTICIPATION (Duration, staff, other basic elements)	
PROPOSED PROJECTS AND SPECIFIC RESPONSIBILITIES	
Project and components	
Responsibilities of the two parties	
FUTURE PROTOCOLS or addendum DURING THE EXISTENCE OF THE PROTOCOL	
PUBLICATIONS AND REPORTS	
All publications will be submitted to the Authority for review and clearance before submission to any outside agency or scientific journal. All publications in scientific journals, surveillance bulletins, or technical reports will be done with the participation, or agreement, of all study collaborators. The order of authorship will reflect the degree of involvement/contribution of each of the authors. The participation and contributions of any other participating centres and their staff will be acknowledged in all publications.	
NEWSPAPER OR PUBLIC RELEASES	
Any public disclosures of research findings in a public forum (e.g. newspapers, interviews with the press, press releases, etc.) must be approved prior to release, by both Parties.	
MODIFICATIONS TO THE PROTOCOL	
No other amendments or additions to this PROTOCOL will be binding unless such amendments or additions are approved in writing and signed by both Parties.	
EXTENSIONS OF THE PROTOCOL	
This PROTOCOL may be extended with the written consent of both Parties.	
TERMINATIONS OF THE PROTOCOL	
This PROTOCOL may be terminated upon the desire of either Party, upon thirty (30) days written notice of intent to terminate or by the expiration of this PROTOCOL.	
ASSIGNMENTS	
Xx will not assign, transfer or delegate any provision(s) of this Protocol without the written permission of the Authority.	
ADMINISTRATORS	
For both Parties:	
EXPIRATION	
This PROTOCOL, unless otherwise modified or terminated, expires on ...	
Signature	
By ...	By ...
Name of Accredited representatives	
Date:	Date:

Appendix V. Researcher, Volunteer, or Trainee Agreement

LETTER OF AGREEMENT DEALING WITH RESEARCHERS, VOLUNTEERS AND TRAINEES IN THE PROTECTED AREAS OF DJIBOUTI

The following has been agreed:

BETWEEN: The Protected Areas of Djibouti (or Obock District)

AND:

Name

Passport number

Contact address of the researcher, volunteer or trainee

If related to an Institution

Name

Address

Contacts details of the Institution and of the Director

GENERAL CONDITIONS

Any research, voluntary or training activity in the area of competence of the relevant region of the Protected Areas of Djibouti requires prior approval by the National or Local Management. Participation in on-going activities is appreciated and does not need any further authorisation. Development of other research or training activities is subject to authorisation. An official request must be sent to the Director of the Protected Areas Network including a full description of the research or training programme (objectives, context, period of realisation, techniques, method of sampling if any, and of analysis).

REGULATIONS AND SPECIAL CONDITIONS

1. During their stay, any researcher, volunteer or trainee must be registered and is required to conscientiously respect all the regulations of the Protected Areas of Djibouti.
2. The researcher, volunteer or trainee is fully aware and fully understands the risks inherent in working as a researcher, volunteer or trainee in the Protected Areas Programme. He/she fully and solely assumes all such risks. He/she will be responsible for his/her own insurance coverage during the period engaged with the Protected Areas Management. This insurance will cover periods of travel to and from the Protected Areas.
3. In relation to the previous statement, the personnel of the National Parks and their donor support programmes cannot be responsible whether under statute or common law or otherwise for loss of life or any personal injury which individuals may suffer howsoever or wheresoever caused, or for any loss or damage to any baggage or personal belongings howsoever or wheresoever caused.
4. The researcher, volunteer or trainee fully agrees to indemnify the National Parks against any loss, cost or expenses arising out of, or connected with, any damage caused by themselves, to people, property or equipment of the National Parks.
5. The researcher, volunteer or trainee declares that he/she has no physical condition or disability, which, under the circumstances, would make it especially hazardous for him/her to work in the National Parks.
6. Jurisdiction or controversy arising hereunder shall be interpreted under the laws of the Republic of Djibouti.
7. Assistance, in particular for transport, accommodation or equipment is subject to prior agreement and may be given if it does not interfere with the activities of the National Parks.

For the Protected Area Network
Manager or Deputy Manager

For the Researcher, Volunteer or Trainee

Date

Date

Appendix VI: International and Proposed National Categories for the Protected Areas of Djibouti

IUCN Category	Proposed National Zoning Category	Management Objectives
I	Strict Nature Reserve or Wilderness Area	Preservation of marine communities in their natural state; reference areas for monitoring and scientific research; Managed mainly for science or wilderness protection.
II	National Park	Conservation of national and internationally significant natural habitats and landscapes, marine and terrestrial, and of representative examples of biodiversity; Managed mainly for ecosystem protection and recreation.
III	Natural Monument	Managed mainly for conservation of specific (unique) natural features.
IV	Habitat/Species Management Area Nature Sanctuary	Managed mainly for conservation through management intervention; To preserve rare and fragile habitats (e.g. seagrass, mangroves, turtle nesting beaches, nurseries or nesting areas), ecosystems, species (fauna and flora, marine and terrestrial) and unique landscapes in an undisturbed state; to provide opportunities for future generations to experience and enjoy undisturbed areas; to maintain natural attributes of the environment; to enable the existing local community to maintain their lifestyle.
V	Protected Landscape/Seascape	Managed mainly for landscape, seascape conservation and recreation; Areas of high scenic and amenity value, managed for their educational and recreational values.
VI	Managed Resources Protected Area	Conservation of ecosystems and biodiversity, while providing for sustainable use by local population and allowing for the development of essential infrastructure; Managed mainly for sustainable use of natural ecosystems; Fishing zones for local licensed fishermen under monitoring.
Adjacent Areas	Protected coastline - infrastructure area Boat access corridors and mooring zones Marine and coastal recreation zone	To provide for infrastructure and economic coastal development under strict control; Safe boating passages, access and moorings without endangering site quality and other activities; Safe marine and coastal recreation (beach, diving, snorkeling), by excluding fishing and motorised boat activities.