

Egyptian Approach Towards Appropriate Use of Coastal Zones on the Red Sea

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Environmental management and appropriate use of coastal zones in Egypt is one of the major challenges facing Egypt. This is a natural outcome of its strategic geographical location straddling both the Mediterranean and the Red Sea which constitute two of the major enclosed coastal seas in the world. Therefore, the problem of the protection of the marine environment in the Egyptian coastal zones has received an early and serious concern by the Egyptian authorities

Being a major tourist and recreation area and due to its exceptional ecological and aesthetic value, and as a result of a number of environmental pressures including rapid development and oil pollution, a development plan for the South Sinai coastal zone area was proposed within an integrated Environmental Management Plan of the Egyptian coastal zones along the Red Sea.

Accordingly, the Gulf of Aqaba coast has been zoned into tourism development areas, protected areas, and National Parks. This will of course ensure that representative, economic and biologically important systems are set aside to guarantee the sustainability of the tourism developments in this unique area.

Due to the repeated and lasting occurrence of oil pollution on the shoreline of the gulf which endanger both the high coral diversity and mangroves which are equally valuable and in need of protection, oil pollution combating arrangements are being established at the entrance to the Gulf of Aqaba.

This paper aims to illustrate the Egyptian approach in the coastal zone management, with special emphasis on the coastal zones of South Sinai adjacent to the Gulf of Aqaba.

1. Introduction

The Egyptian government has recognized that its coastal zone areas were being degraded and damaged by improper use, pollution impacts, and neglect. In response to this, the government has started implementation of a National Parks and protected areas' system coupled to a rational management program designed to arrest their deterioration and improve their resources, while deriving the full economic potential from each area. This is a natural outcome of its strategic geographical location adjacent to both the Mediterranean and the Red Sea which constitute two of the major enclosed coastal seas in the world. Moreover, these are designated as "Special Areas" in which discharge of oil from ships is prohibited according to the international convention for Prevention of Pollution from ships (MARPOL 73/78) among other areas

Within the national strategy in implementing coastal zones integrated Environmental Management plan in Egypt, a development plan for the South Sinai coastal zone as a pilot project, was proposed. This was due to its exceptional ecological and aesthetic value.

This paper is an attempt to summarize the measures and arrangement taken in Egypt towards appropriate use and efficient management of its coastal zones with special emphasis on the South Sinai coastal zone area bordering the Gulf of Aqaba.

2. National Protected Areas Legislation

The National law concerned with development and management of Natural Protectorates (Law No. 102) was ratified by the People's Assembly in July 1983.

- The Law, among other provisions, has included rules concerned with:
- Definition of the protected area, its justifications and its purpose,
 - Designation and delineation of protected areas to be declared through a decree from the Prime Minister, upon recommendation from the Egyptian Environment Affairs Agency (EEAA),
 - Forbidding actions that will lead to the destruction or deterioration of the natural environment, or harm the biota (terrestrial, freshwater or marine), or which will detract from the aesthetic value of the protected area or its constituent elements.
 - Covering activities forbidden outside protected area within a definite perimeter, activities which could be more intensive than those within the protected area itself, but less intensive at any rate than those outside that perimeter.
 - Permitting NGO's to follow up the implementation of laws and decrees concerning management of protected areas in courts.
 - Establishment of a special fund to be used in promoting the protected areas.

To date 12 areas throughout Egypt have met the necessary criteria and have been set aside as Natural Protectorate or National Parks (Table 1).

Table 1: List of declared Protected Areas

	Name of Protected area or Park	Nature of the area	Location
1	Ras Mohamed, Tiran and Senafir Islands	Marine National Park	South Sinai
2	St. Katherine	Natural and Cultural and Heritage site	South Sinai
3a	Lake Bardawil in the Zaraneik Area	Migratory Birds Sanctuary	North Sinai
3b	Coastal Ahrash (El Arish to Rafah)	Terrestrial Birds and Mammals	North Sinai
4	Ashtoum El Gamil and Tannis Island/Lake Manzallah	Migratory Birds Sanctuary	Port Said
5	Omayed Area	Biosphere Reserve	Matrouh
6	Elba Area	Forests, Mangroves, Mammals	Red Sea
7	Salouga and Gazelle Island	Vegetation	Aswan
8	Lake Karoun and Fayoum	Bird Sanctuary, Mammals Wadi-el-Rayan	
9	Hassana Dome	Geologic features	Giza
10	Petrified Forest-ElMaadi	Petrified forest	Cairo
11	Wadi el Assiuty	Genetic Bank, Resource Replenishment	Assiut
12	Wadi el Allaqi	Vegetation	Aswan

However, on the international level, Egypt has ratified most of the international and regional conventions and treaties concerned with the protection of the Marine Environment and control of pollution including the world heritage convention.

3. Administration of Protected Areas

The Egyptian Environment Affairs Agency (EEAA), which is the competent body for the implementation of the provisions of Law No. 102, has initiated a development programme for Natural Protectorates in the country.

Recognizing the natural and economic importance of the Ras Mohamed area in the South Sinai, it has been selected to be the first area for the implementation of such programme. The EEAA has requested the assistance of the European Community in the development of a National Marine Park involving a rational and comprehensive development programme in this unique area. The proposed management structure and line of authority not only for the Marine Park but also for the National Parks Management Authority in Egypt which was made by the EEC consultant is illustrated in Fig. 1.

Such structure, which is deemed essential for long term development of a Natural Protectorate in Egypt, aims to maintain its independent and selfsufficient management under the umbrella of EEAA.

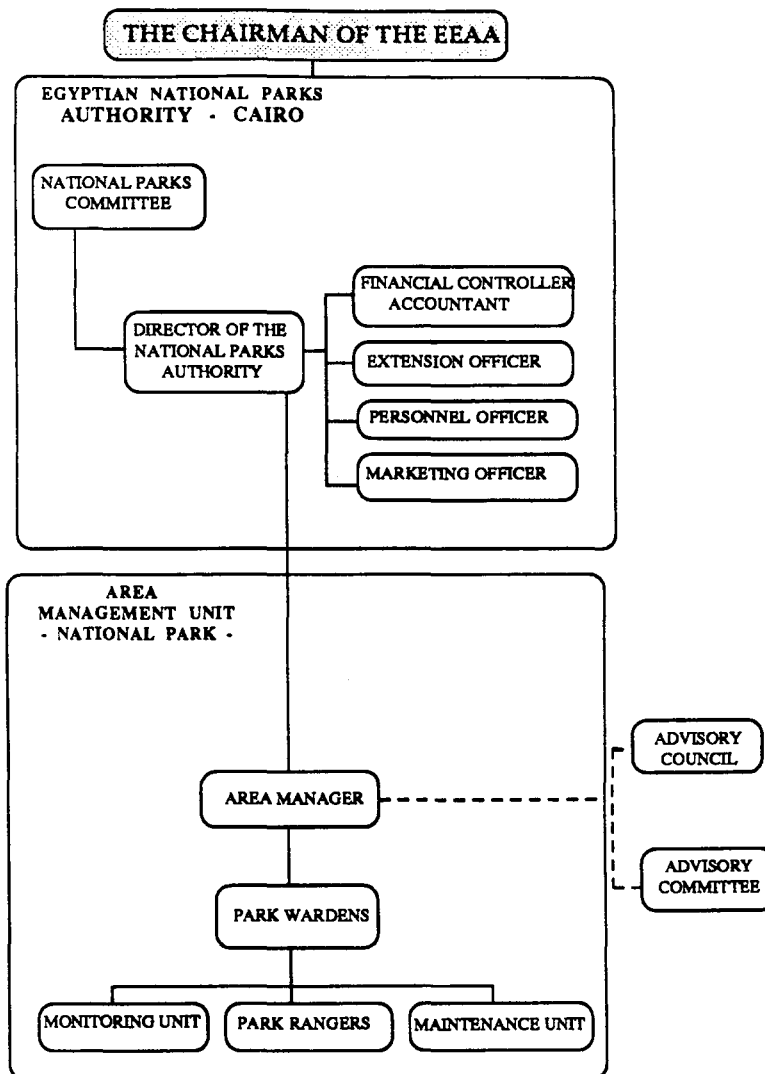


Fig. 1 Proposed Management Structure of National Parks Authority

4. Comprehensive Development Master Plan of South Sinai

Recognizing the ecological and economic value of the coastal zone of the South Sinai from Ras Mohamed to Taba, a development plan for the area was proposed within an integrated Environmental Management Plan for the Egyptian coastal zones on the Red Sea.

The strategy of such Plan should be based on the concept of "sustainable development" i.e. should be seeking to provide goods and services, minimizing the negative effects of changes, hold open the options for ecosystems recovery, preserve the free services of natural ecosystems, and do all the forgoing in a way that maintains the major attributes of the area for future generations to use and enjoy.

However, in preparing the Plan, the following requirements and objectives have been taken into consideration:

- Any new development project should submit Environmental Impact Assessment documents (EIA), to prove its environmental worthiness before it is allowed to proceed to the stage of implementation.
- The importance of relying on the use of clean technology and renewable energy whenever applicable in the new development projects.
- Introduce practical ideas for the creation of unique urban and recreation centers which could attract and encourage residents to stay in the area.
- The plan should be in harmony with the environment, with particular attention paid to improvement, conservation and management of the coastal zone.

4.1 Description of the Gulf of Aqaba

The Sinai Peninsula separates two fundamentally marine basins. The Gulf of Suez is a shallow body of water, with depth maxima between 60 and 70 m. The Gulf of Aqaba is a deep, narrow trench which prolongs the Red Sea rift valley and has a maximum depth of 1829 m. Coral reefs have developed all around the peninsula, but while alluvial plain borders the southern part of the Gulf of Suez, the Gulf of Aqaba coastline is mountainous.

On the Gulf of Aqaba side, the Eastern Sinai shoreline is mostly very steep, often with rock versants plunging abruptly down to the underwater deep of the rift valley. Beaches are found in pockets between rocky spurs and on the few alluvial fans of wadis. Ras Mohamed forms the southern tip of the Sinai peninsula, and deep water of more than 1000 m extends right up the foot of the Ras. A relatively shallower sill (340 m) separates the Gulf of Aqaba from the deep Red Sea basin. The trench is affected by tectonic activity which slowly moves the coast of Saudi Arabia and the coast of Egypt apart.

Ecologically the Gulf of Aqaba has a high coral diversity, about 129 species of hermatypic corals and almost 120 species of soft corals, in addition to a wide range of fish species and reef fish. Such unique and rare ecological characteristics attract divers from all over the world, and there are a number of diving resort in Na'ama Bay, Nuweiba, Hurghada and Sharm el Sheikh, the latter being the most popular one.

Also in the Nabq area, a large and beautiful mangrove forest, which provides an exceptionally attractive environment, extends over about 5 km. These *Avicennia marina* woods are referred to as the Nahabat el-Tel mangroves and they are the northernmost mangrove system of the continent and the closest to Europe (Jacques, 1989).

4.2 Development Plan for Tourism Activities

Due to accelerated developments in the tourism sector in the area, the EEAA in close cooperation with the Ministry of Tourism, has proposed that the Gulf of Aqaba coast be zoned into Tourism Development Areas, Protected Areas and National Park (Fig. 2).

The proposals made by the EEAA were aiming to achieve the following objectives:

- a) To increase the coverage of protected coastal and inland areas adjacent to them. This will ensure that representative, economic and biologically important systems are set aside to guarantee the sustainability of the tourism developments.
- b) To declare areas zoned for tourism development as conservation zones. Such action will ensure that all developments must abide by guidelines designed to eliminate any development projects which may result in negative environmental impacts.
- c) To develop the Ras Mohamed National Marine Park as an international example of sound area management which will be an invaluable education tool and heritage for the Egyptian people.

Accordingly the EEAA is now taking the necessary official steps towards declaring the following areas as Protected Areas.

- Extension of Tiran and Senafir Protected Area to include the straits of Tiran, Ras Nasrani and the coastal area north of Ras Nasrani.
- The Nabq Protected Area
- The Abu Galum Protected Area

All other areas which are not declared as Protected Areas will be considered as conservation zones.

5. Marine Pollution Control

There has been an early concern and awareness of the seriousness of the problem of marine pollution control in Egypt. Prevention and control of marine pollution has been tackled by taking the following effective measures.

5.1 National Legislation for Protection of Marine Environment

A draft national law for Protection of Marine Environment which is implementing MARPOL 73/78, has been prepared and approved by the cabinet and submitted to the People's Assembly (Parliament). This law has not only increased the values of penalties to deter violations of its provisions but also included provisions regarding

- Effective measures against land-based sources.
- Effective surveillance of shipping lanes, anchorages, exploration and production activities.
- Legal procedures regarding compensation and liability.

5.2 National Oil Spill Contingency Plan

In response to the national consensus that Egyptian coasts and waters should be kept clean and unpolluted, a national oil spill contingency plan has been developed and approved by the Prime Minister in 1986.

However, in preparing the plan, the following parameters have been taken into consideration:

- Plan must be in harmony with that of neighbouring countries to facilitate cooperation.
- Plan relies on the availability of both mechanical and chemical equipment in combating oil pollution.
- Establishment of four local response centers on both the Mediterranean Sea and Red Sea with a national coordinating response centre located in Alexandria.

In order to achieve effective implementation, the plan specifies minimum anti-pollution equipment for local activities (Harbours, Port Authorities and offshore operations).

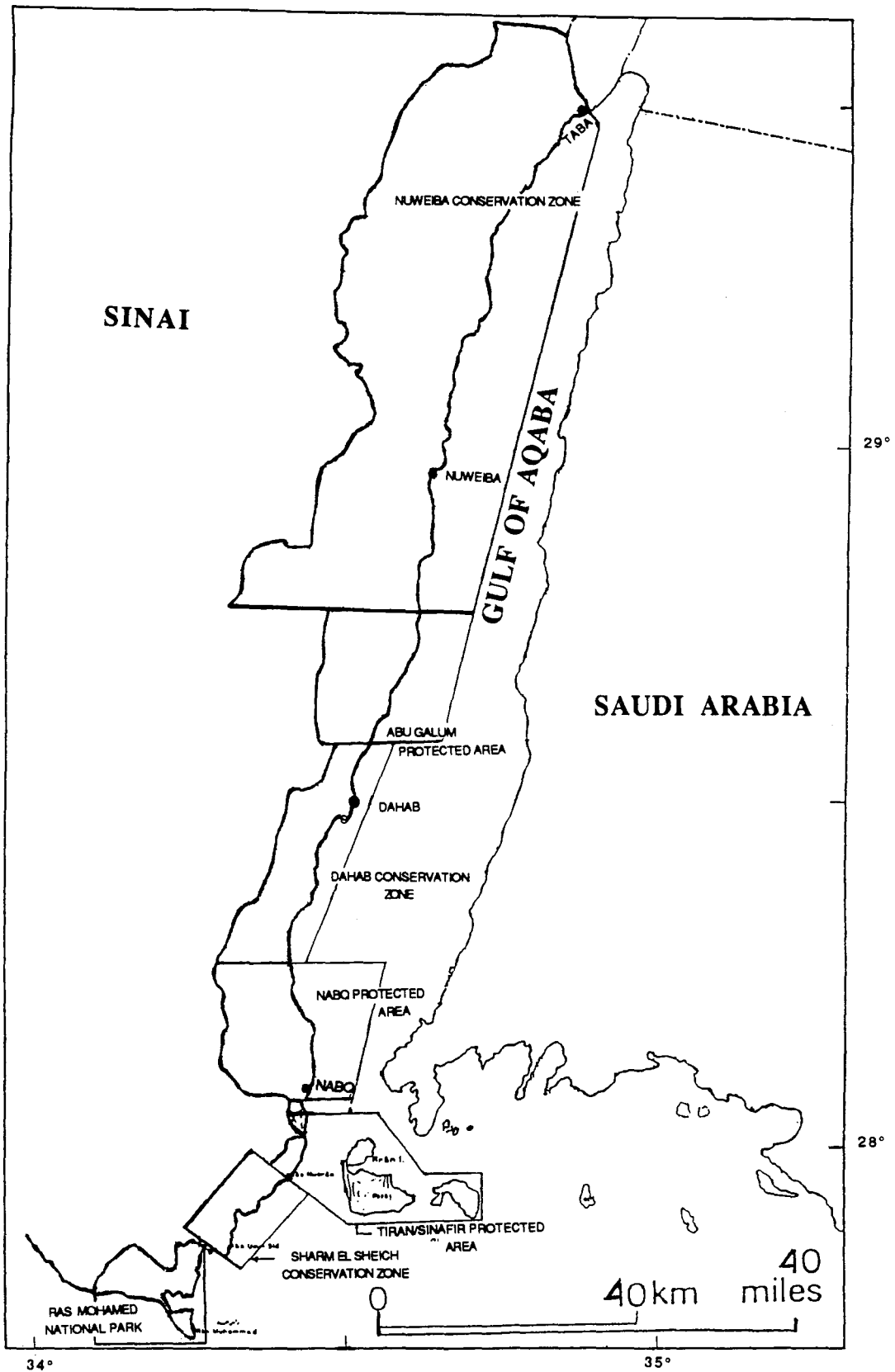


Fig. 2 Proposed Zoning of the Gulf of Aqaba

5.3 Marine Pollution control at the Entrance of Gulf of Aqaba

The repeated and lasting occurrence of accidental oil pollution near the shoreline of the Gulf has reflected the need for oil pollution combating arrangements at the entrance to the Gulf of Aqaba. Such arrangements will be achieved through the establishment of an additional oil pollution combating Emergency Centre at the entrance to the Gulf of Aqaba, and additionally will be incorporated into the existing National Oil Spill Contingency Plan. This will ensure efficient response to accidental oil spillages in the area and accordingly reduce the threat of pollution in the area.

6. Conclusions

The Egyptian Environment Affairs Agency feels that rational and intelligent development of coastal zone areas in South Sinai is in the best interests of the country of Egypt and its economic future.

We also feel that the proposed plan will encourage development in the area along acceptable lines, while retaining the beauty and character of the area will encourage the involvement of resident populations and will ensure that the South Sinai will retain its potential for attracting tourism.

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