

**UNITED NATIONS DEVELOPMENT PROGRAMME  
GLOBAL ENVIRONMENT FACILITY**

**Project of the Government of  
the Arab Republic of Egypt**

**PROJECT DOCUMENT**

Number: EGY/97/G33/A/1G/99  
 Title: Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region

Duration: 5 years

Project Sites: Matrouh, Lakes Burullus and Bardawil

ACC/UNDP Sector and Sub-sector: 0400 Environment  
 0340 Biological resources

<p><b>UNDP/GEF: \$2,884,000</b></p> <p><b>National Contribution:</b>  <b>\$ 1,495,726 (in cash)</b>  <b>\$ 1,732,000 (in-kind)</b></p> <p><b>Total : \$ 3,227,726</b></p>
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GEF Theme: Biodiversity  
 Government Implementing Agency : Ministry of Environment, Egyptian Environment Affairs Agency  
 Executing Agency: Government of the Arab Republic of Egypt  
 Estimated Starting Date : February 1999

**Brief Description:**

This project is the Egyptian component of a Mediterranean regional initiative involving Albania, Egypt, Lebanon, Morocco, the Palestinian Authority and Tunisia. The overall initiative is aimed at ensuring the sustainable management the biological diversity of the coastal areas and wetlands in 6 Mediterranean countries/Authority through the development of adequate legal and regulatory frameworks, the creation of institutional organizations adapted to the complexity of the issues at stake, capacity-building and the development of an exchange network at the regional level both to achieve economies of scale and to save time when implementing and replicating the innovating actions undertaken.

The objective of the project is to create or enhance the exchange structures and fora concerned with this general management:

- ◆ By establishing interministerial coordination mechanisms for projects undertaken at the local and national levels;
- ◆ By developing demonstration activities at the most significant sites;
- ◆ By awareness-raising, training and networking of the population groups and the social and economic actors and establishing linkages between them around the Mediterranean basin.

On behalf of	Signature	Date	Name/Title
Government:	_____	_____	_____
UNDP:	_____	_____	_____

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## A. CONTEXT

### 1. REGIONALITY OF PROJECT

The main objective of this project is to build capacity in the participating countries in the Mediterranean region to conserve threatened, globally significant biodiversity in coastal and wetland eco-systems within the framework of sustainable coastal development. The project therefore aims at «closing the Mediterranean circle», in terms of wetland and coastal conservation initiative. The project will ensure that lessons learned and experiences made in the northern rim of the Mediterranean can be effectively transferred and, where applicable, applied and/or adapted to the prevailing circumstances in the participating countries. The regionality of the project provides a greater cost effectiveness and effectiveness for such information and experience transfers both on a north-south basis as well as on a south-south basis.

For the purposes of this project, eligible wetlands, primarily of lagoon type, are those whose flows are interconnected with the Mediterranean Sea, while coastal areas are the terrestrial components of the coastal zone in the vicinity, and under the influence of the Mediterranean Sea. The project does therefore not address navigational and marine pollution issues and nor marine biodiversity. These are presently covered by other existing and planned programmes, in particular under MAP/UNEP (GEF PDF B: Formulation of a strategic action programme for the Mediterranean Sea to address pollution from land-based activities).

This proposal addresses conservation of globally threatened biodiversity in 16 important wetland and coastal sites in five Mediterranean countries and in the Palestinian Authority. Through a combination of innovative land-use and wetland policies at national level, site protection and management at local level and regional networking and exchange of experience the proposal will provide a biodiversity protection increment to other brown programme addressing pollution and water resource issues in the beneficiary countries/authority. At site level mechanisms for taking account of local concerns and ensuring local participation and economic returns are built into the project from the outset.

The Mediterranean region has seen the rise and fall of many empires over the last 2500 years. Numerous invasions and commercial links, many of them by sea, have seen eastern traders found cities in the western basin, Catalan influence extend as far as Greece, and Arabic culture penetrate well into the Iberian peninsula. These fluxes, together with the enclosed nature of the sea, have led to the establishment of a common Mediterranean identity and culture. This identity is reinforced by the circum-Mediterranean climate of hot dry summers and rainy winters, which is also responsible for the development of ecosystems characteristic of the region.

The Mediterranean coastline (26,000 km) is an area of high biodiversity, where more than 50% of the 25,000 plant species are endemic to the region. It is also a critical area for migratory birds in the Africa-Palearctic flyway as wetlands in the region provide an essential flyway stepping stone on either side of the Mediterranean Sea and between the sea and the vast expanse of the Sahara desert to the south.

The major threats to the exceptional biodiversity of these wetland and coastal ecosystems related to uncontrolled development, urbanization, increasing national and international tourism, land-based pollution, and unplanned or over-exploitation of natural resources, in particular freshwater.

Aware of their common heritage, the Mediterranean States and European Union have developed common programmes and policies for the sustainable development and conservation of the coast since 1975. The Mediterranean Action Plan (UNEP Regional Seas Programme), the Mediterranean Commission on Sustainable Development, METAP, LIFE, MedWet, Natura 2000 and MEDA (EU) are some of these regional initiatives.

The MedWet programme for the conservation of Mediterranean wetlands originated from the Grado Conference (Italy, 1991). The initiative was recently widened (Venice, 1996) where all the riparian States present endorsed a common strategy for the conservation of Mediterranean wetlands. In parallel, the Mediterranean Action Plan, Conservatoire du Littoral (France) and Ramsar Convention secretariat held a joint technical meeting on coastal zone management (Hyeres, 1995) where 12 countries agreed on the need to develop land use policies for effective management of the coastal zone.

Today, the States of the Mediterranean region are at different stages of economic and institutional development and therefore differ in their capacity to address biodiversity issues within the context of sustainable development. Incremental funding is required to allow them to implement agreed regional policies in the field.

The overall GEF-funded Wetlands and Coastal project includes six countries/authorities, namely Albania, Egypt, Tunisia, Morocco, Lebanon, and the Palestinian Authority.

## 2. DESCRIPTION OF SUBSECTOR

Egypt has a range of important wetlands, has signed the Ramsar, Biodiversity and Barcelona Conventions, and has formally expressed the wish to participate in the regional MedWet activity which promotes wetland conservation and management activities throughout the Mediterranean region<sup>1</sup>.

Egypt has linkages to several biogeographical regions. The Red Sea coast links it to the tropical seas of the Indian Ocean. The river Nile to the afrotropical realm and the Mediterranean Sea has a major influence in the north of the country. Much of Egypt is desert with rainfall of less than 100mm per year, and only 3.2 % is cultivated.

The fertile lands of the Nile basin and the river itself provide the main resources of the country and its 62 million people. Over 97% of the population live in the Nile Valley and Delta which amounts to less than 3% of the total land area of the country. Densities in the Nile Delta reach 1,400 inhabitants/km<sup>2</sup> and population growth is estimated in excess of 2 % per year. The available land is increasingly unable to support the population, although 630,000 ha have been reclaimed since 1970. Urban populations are also on the rise; Greater Cairo is estimated to have 17 million inhabitants and is growing at a rate of around 3% per year. Land reclamation has failed to keep pace with encroachment of urban areas and 1 to 2% of agricultural land is thought to be lost to construction every year.

Egypt depends largely on the annual floods of the river Nile for its water resources. The 1959 agreement with Sudan guarantees an annual supply of 55.5 billion cubic liters per year regulated by the Aswan High Dam. Provisions for water-sharing with other upstream states are currently under discussion. Groundwater resources are commonly used in the Delta, although ground water is increasingly salinised due to sea-water intrusion. With the growth in population, Egypt will soon be unable to satisfy current consumption rates with finite resources. Water is provided virtually for free in rural areas and is under-priced in urban areas; therefore, incentives for its conservation are limited. In the future renewable resources will have to be carefully managed, including extensive water recycling, if the needs of the population are to be met.

Recycling of drainage water is high on the agenda, yet drainage water is often polluted with sewage, agricultural or industrial effluents, making these secondary water resources unsuitable for direct use. For example, the Nile River supplies 65% of industrial needs and receives 57% of its effluents; moreover, fish from the Delta lakes contain 5 - 10 times acceptable levels of DDT. Newly reclaimed land in Sinai and around Alexandria will be supplied with a mixture of fresh water and drainage water to ensure acceptable quality.

Egypt was self-sufficient in agriculture until the early 1970s, yet only produced 50% of the country's needs in 1992. The principal crops include cereals (46% of land area), fodder crops (23%), vegetables (10%), followed by cotton (8%), and sugarcane, citrus and oil crops. All of these require some irrigation to complete their cycle and agriculture accounts for around 84% of Nile water use. Agricultural inputs, especially fertilizer and pesticides/herbicides are poorly regulated, although in recent years pesticide inputs have been declining thanks to increased extension work, and declining government subsidies. Livestock accounts for 25% of the value of agricultural production and fisheries for 4.5%.

In the Mediterranean coastal zone urban extension and secondary housing have spread outwards from existing urban centres and tourist developments developed *ex nihilo*. This has led to extensive land speculation along the whole coastline.

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<sup>1</sup>The MedWet activity is coordinated through the Ramsar Bureau and has the support of all the contracting parties of the region, and of the Conference of Contracting parties.

The biodiversity of Egypt is relatively well-known, and includes over 2100 plant species (60 endemics), 470 bird species, 100 reptiles and amphibians and 98 land mammals. The Red Sea coast harbours spectacular coral reefs and the desert habitats are extensive and, in places, rich in endemics or medicinal plant species. The Aswan High Dam has created a major wetland in the middle reaches of the Nile Valley, which along with the lagoons of the Nile Delta and the desert oases constitutes a rich network of ecosystems, although many of the Delta lagoons, such as Maryut and Manzala are now seriously polluted.

Environmental issues in Egypt have been neglected for many years, and only relatively recently has there been strong state commitment, and donor interest in supporting the implementation of measures to address them. Many of the environmental indicators on air pollution in Cairo, vehicle emissions, industrial outflows or water quality in the Nile and associated drainage system exceed internationally accepted norms, often by several orders of magnitude.

### 3. HOST COUNTRY STRATEGY

The Egyptian Environmental Affairs Agency (EEAA) was created in 1982 to address environmental issues and over the last five years there is an increasing awareness on the part of the Egyptian government of the need to deal with essential pollution problems if sustainable development is to be achieved and the health of human populations assured. The National Environmental Action Plan was published in 1992 and the Agency's mandate further reinforced by the passing of the Law 4 for the Environment in 1994.

A National Committee for Integrated Coastal Zone Management was set up after the passing of Law 4/1994, with the focal point at the Environmental Management Sector/EEAA. The committee was given the task of developing an Integrated Coastal Zone Management Programme (ICZM). A workshop held at Hurghada in May 1995 laid the basis for the development of a framework programme for ICZM through a list of recommendations. The framework programme, published in December 1996 calls for the reinforcement of the national ICZM committee and the development of four national strategies or plans :

- National Shore Protection Plan
- National Coastal Land-use Plan
- National Coastal and Marine Water Quality Plan
- National Coastal and Marine Resources Preservation Plan

Egypt has ratified the Biodiversity Convention and has already undertaken a range of studies, including *Habitat Diversity: Egypt* in 1993 and *National Country Study on Biological Diversity* in 1995. In December 1994, as part of the country study, the EEAA published a biodiversity review for each of the major wetlands in the country (Lakes Nasser, Manzala, Burullus, Bardawil, Maryut, Idku, Qarun), these will shortly be published after internal review. For the coastal zone, there is substantial qualitative biodiversity information available, but this has yet to be formally structured. A National Biodiversity Strategy is currently being finalized, which gives high priority to the conservation and sustainable development of wetlands and coastal and marine resources.

The national protected area network currently includes 19 sites covering over 8 % of the country. Two major wetlands are already protected (Lake Qarun and Wadi El Rayan), as well as parts of three others (Ashtom El Gamil at Lake Manzala, Zaranik at Lake Bardawil, Saluga and Ghazal on the Nile in Aswan). In May 1998, a third major wetland, Lake Burullus was added to the network. Recent declarations by the Prime Minister set a target of covering 15 % of the national territory by 2005.

Local NGO partners in the fields of nature and biodiversity conservation are rather rare in Egypt at the national and site level, and the project will have to promote their development if they are to assist in implementation.

### 4. PRIOR OR ONGOING ASSISTANCE

There is currently strong donor support to Egyptian Environmental Affairs Agency (EEAA) to assist the Agency in setting up the central and regionalised structures necessary to implement its mandate, much of it concerned with environmental quality issues (pollution).

The EEAA currently has several ongoing programmes relevant to biodiversity preservation; the European Union (EU) is funding an 16 million ECU programme for the establishment and management of a protected area network in South Sinai, including Ras Mohammed National Park, and St Katherine, Nabaq, Abu Ghalum and Taba Protected Areas. While this largely involves the Sinai, the EU programme also includes an institution and capacity building component for the Nature Conservation Section/EEAA and development and reinforcement of a nationwide protected area network.

UNEP supported the establishment of a National Biodiversity Unit (NBU) at the Nature Conservation Section/EEAA to oversee compliance to the provisions of the Biodiversity Convention. With UNEP support (GEF enabling activities), two studies, *Habitat Diversity: Egypt* and the *National Biodiversity Country Study* were produced and a National Biodiversity Strategy is nearing completion. A Biodiversity Data Bank was also established to collect, coordinate and synthesize information on biodiversity.

Danida is supporting the establishment of an integrated coastal zone management programme through the EEAA which proposed an action framework (see above) and is strengthening the Agency's oil spill combating capabilities. Both Danida and Canada are developing the EEAA's capacities in environmental monitoring which includes monitoring of Mediterranean coastal zones.

There are many other relevant donor programmes: the GEF is funding the construction of an artificial wetland at Lake Manzala as a demonstration project for sewage treatment (5 million US \$); there is an EU fisheries project at Lake Bardawil (3 million ECU 1991 - 1998); and a major agricultural project to irrigate North Sinai through the implementation of the El Salam Canal which will impact directly on the immediate environment of Lake Bardawil. The World Bank is providing assistance around Lake Burullus for agricultural water resources management, particularly hydrological monitoring on the inflows to the lake. Both the GTZ and the World Bank are supporting natural resource management programmes on the North Coast near Matruh.

## 5. INSTITUTIONAL FRAMEWORK FOR SUBSECTOR

In July 1997, a Minister of State for Environmental Affairs was appointed to be responsible for environmental issues and the EEAA is now affiliated to this Minister.

There are three main legal texts giving the Egyptian Environmental Affairs Agency (EEAA) the mandate to coordinate activities in the field of environment:

1982	Presidential Decree creating EEAA (631)
1983	Law 102 for the Natural Protectorates and its supporting decrees (particularly Prime Ministerial Decree 264/1994)
1994	Law 4 for the Environment

Law 102/1983 for the Natural Protectorates provided the legal framework for the establishment and management of nature reserves and national parks in Egypt. It was ratified by the Peoples Assembly and Shura Council on July 20 1983 and published in the Official Journal on August 4, 1983. This law explicitly prohibits any action that would endanger living species or destroy landscapes within the protected area. It also regulates economic activities and experiments in the declared "adjacent area" outside the protected area. Protected areas are established and delineated by Prime Ministerial Decree based on the recommendations of the EEAA.

The EEAA established by Presidential Decree 631/1982, is the competent body for the implementation of provisions of Law 102/1983. Each protected area is to be administered by a manager, rangers, researchers and a scientific consultant. Law 102 stipulates the creation of a special fund to manage all funds, donation, grants and subsidies on behalf of the protected areas. This fund now forms part of the Environment Fund established under the more recent Law 4/1994.

Law 4/1994 for the Environment provides for a comprehensive framework for environmental issues, establishing EIA procedures, protection of environment from pollution, both air and water, hazardous and solid waste management etc. The law contains several articles concerning hunting and gives the EEAA responsibilities for hunting management. A recent survey found that responsibility for environmental affairs was largely dispersed

between ministries <sup>2</sup>, while EEAA had a key coordinating mandate. The Natural Protectorates department is the only department with executive powers, given by Law 102/1983.

Law 4/1994 made the EEAA responsible for international conventions for the environment. Egypt has signed the following international and regional agreements for the conservation of nature and natural resources:

Convention on Wetlands of International Importance (Ramsar)  
Convention on International Trade in Endangered Species of Fauna and Flora (CITES)  
Convention on the Protection of the Mediterranean Sea from Pollution (Barcelona)  
(including Protocol concerning Specially Protected Areas)  
Convention on the Conservation of Migratory Species of Wild Animal (CMS)  
Convention on Biodiversity  
Convention on Desertification

In 1994 the EEAA was restructured and the following relevant sub-departments were created:

a) *Nature Conservation Section* is the government body responsible for nature conservation and is the focal point for international agreements concerning the protection of nature: RAMSAR, CMS, CITES, Biodiversity, and the Specially Protected Area Protocol of the Barcelona Convention. The department is responsible for the management of the national network of nature reserves and oversees management of the 18 Protected Areas in Egypt. The sector is also responsible for overseeing the provisions of Law 4/1994 which concern hunting management. A National Biodiversity Unit (NBU) has been established at the department to collect and disseminate information concerning the nation's biodiversity.

b) *Environmental Management Sector* is concerned with activities of different actors, such as government agencies, the business community, NGOs to improve environmental planning and prevent or mitigate threats to the environment. The sector employs different tools for environmental management and is responsible for reviewing EIAs. There are a number of different departments under the Sector, including Hazardous Substances and Solid Waste, Management, Environmental Development (integrating environment considerations into the planning of new cities and rural communities) and the Coastal and Maritime Zones Management Department, which is responsible for the protection of coastal and marine resources. This sector is the focal point for the Barcelona Convention.

c) *Environmental Quality Sector* is responsible for environmental monitoring, particularly of ambient sources of pollution, such as those related to water, air, soil and public health. The Sector monitors water pollution along the Mediterranean coast.

Branch offices of EEAA were created by Ministerial Decree 187/1995 to implement EEAA responsibilities at the Governorate level. Limited resources mean that branch offices deal with several Governorates at the present time: the office in Tanta (Middle Delta branch), includes Daqahilya and Kafr El Sheikh, Alexandria deals with Matruh and the Suez Canal branch in Suez is responsible for North Sinai.

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<sup>2</sup>It has been estimated that in the environmental area:

- 17 ministries administer 81 laws with environmental components
- 8 ministries are mandated by 34 Presidential decrees on environmental issues
- 3 ministries implement 17 environmental decrees issued by the Prime Minister
- 11 ministries have issued a total of 287 environmental decrees.

Source : Fahmy K M Highlights on environmental management in the Arab Republic of Egypt. 1995



## **B. PROJECT JUSTIFICATION**

### **1. PRESENT SITUATION AND THE PROBLEM TO BE ADDRESSED**

#### *1.1 National level*

Egypt has a fast-growing population whose basic needs are met principally from the natural resources of the river Nile, its floodplain and delta. The growing pressure on water resources obliges the country to re-use drainage water for irrigation and industrial purposes, and the water finally drained into the complex of coastal lagoons, or to the sea, is of low quality.

The coastal lagoons have seen their clean freshwater supply cut off by the Aswan High Dam, and replaced by drainage water from agriculture and cities, leading to problems of eutrophication and widespread heavy metal, pesticide and sewage discharges. This drainage water has gradually freshened the lagoons from saline or brackish to a basically freshwater system. This can be illustrated by Lake Manzala which has extensive reed and *Typha* beds after 30 years of relatively fresh drainage inflow and Lake Bardawil at the other extreme, which currently has around 70 g/l of salt as there are as yet no drainage inflows. Bardawil is expected to become fresher in time following the ongoing construction of the El Salam Canal which will irrigate North Sinai.

Water is a constant preoccupation at the national level, given the growing requirements in all sectors. The Toshka Canal under construction near Abu Simbel aims to irrigate over a million feddan of land in the southern Western Desert using water from Lake Nasser. Insuring sufficient water for this project is further necessitating that Egypt economize on its limited water resources.

A wide range of policies are under discussion, or already in place, to improve water resource use, limit wastage and reduce losses to the sea. In the long term, the declared national policy is to use every available cubic metre efficiently. In the agricultural sector, water pricing to reduce wastage and encourage good practice is increasingly on the agenda, yet difficult to implement due to local resistance, historical water management and the sheer complexity of the irrigation system with its multitude of small holders.

Wetlands clearly require water for their long term survival and it is important that their legitimate water needs are evaluated and recognised in parallel with those of other sectors. This is the only way to maintain their important functions for fisheries, as well as for wildlife. Progress in this area is clearly being made at Lake Burullus where recent proposals to raise banks and create a water storage area for irrigation were replaced by a policy to promote existing resource use by the fishermen on the lake.

The Mediterranean coast of Egypt can be divided into three distinct biogeographical regions:

- a) *North Coast.* The 550 km of coastline from Salum on the border with Libya to Abu Qir on the fringe of the Delta is characterised by a series of long limestone ridges running parallel to the sea, interspersed with depressions containing saltmarshes. The relatively high precipitation (up to 200 mm per year) promotes rich vegetation growth. Livestock grazing and rainfed agriculture in places constitute the main land-use. Extensive coastal tourism development is spreading out from all major urban areas.
- b) *Nile Delta.* The influence of the Nile River has created a series of coastal lagoons, separated from the sea by a narrow sandbar. They all have natural or man-made outlets to the sea. Lakes Idku, Maryut and Manzala are all highly polluted and eutrophic. Land reclamation for fishfarms or agriculture is common everywhere. All of the Delta lakes are influenced by agricultural or urban drainage water. Tourism construction is increasing along the coast.
- c) *North Sinai.* The coastal region of 240 km from Port Said to Rafah receives less rain than the North Coast, but has some of the highest annual precipitation in the country. The coastline is characterised by sand dunes, sandy beaches and salt marshes. Two saline coastal lagoons, El Malaha and Bardawil have narrow channels linking them with the sea. Livestock grazing and irrigated agriculture are common. Tourism development is spreading out from El Arish.

Biodiversity distribution in Egypt is not fully known and no full surveys of the 1000 km. of coastline have been undertaken. The national working group established under the Project Development Fund (PDF) for this project therefore had difficulty in passing from a national list of species to a fully spatial analysis able to guide decision-making. However, the data allowed 15 sites of importance along the Mediterranean coastline to be identified, of which three were retained for the present project - Zaranik in North Sinai, Burullus in the Delta and the Matruh Sector on the North Coast.

## 1.2. Site Descriptions

### 1.2.1 Zaranik

#### 1.2.1.1 Site description

The Zaranik Protected Area on the Mediterranean coast of North Sinai is a very important site for the passage of migratory birds. It is a considerable bottleneck for migrant water birds passing through the Eastern Mediterranean region, where wetlands are scarce.

The reserve was established by Prime Ministerial Decree 1429 in 1985, under Law 102/1994 for the Natural Protectorates. The "adjacent area" to the reserve and its precise boundaries were officially declared in 1996. The reserve covers 250 km<sup>2</sup> of terrestrial and saltmarsh habitat. The reserve encompasses 28 km of Mediterranean coast including the eastern tip of Lake Bardawil.

Lake Bardawil is 95 km long and 25 km wide at maximum (60,000 ha), occupying more than half the length of the Sinai's Mediterranean coastline. The lagoon is separated from the sea by a narrow sand bar and is a vast area of shallow water with small islands, marshes and saltflats. Maximum water depth is 3m and average water depth is only 1m. The Bardawil Lagoon is the least polluted body of water in the country, not yet influenced by drainage water from agriculture or cities, unlike all the Delta lagoons, and maintains a salinity higher than sea water with water circulating through the three outlets which connect it to the sea.

The land is State owned; however, the local Bedouin retain traditional exploitation rights. In 1991 the population of the North Sinai Governorate was estimated at 203,300 people, over 70% of whom live along the coastal road - most are Bedouin. They cultivate rain fed crops such as wheat, corn, barley, and use drip irrigation, for olives, vegetables and fruit trees (figs, apricots). Date palms are common. According to the Governorate, 2000 families live around Lake Bardawil and they own 2300 camels, 29,000 goats, and 12,000 sheep. Sedentarisation along the coast road has led to decline in pasture quality and an increasing reliance on fodder bought in local markets. During the fishing season, 50 people live in the Zaranik Protected Area. There are twelve local tribes of which four live around Bardawil.

Private summer houses, resorts and hotels occupy the coast between El Arish and Zaranik, constructed since the return of the Sinai was complete in 1982. In 1992 around 25,000 tourists came to the area, 81% were Egyptians. Bed occupancy in North Sinai is very low, attributed to inadequate planning, the low quality of the accommodation available and environmental problems.

The North Sinai Agricultural Development Project (NSADP) will bring irrigation water along the El Salam Canal to irrigate 170,000 ha, and the project plans to settle a figure variously quoted as 300,000 to 1,000,000 people. The first four blocks will be completed by 1999. There are apparently no plans to drain water from this major irrigated development into Lake Bardawil, but precise plans for disposal of this water are still in formulation. The current proposal seems to be to return the drainage water to the Suez Canal through a drainage canal parallel to the irrigation network.

#### 1.2.1.2 Biodiversity

The typical flora of the saltmarshes and foreshore includes: *Halocnemon strobilaceum*, *Arthrocnemon glaucum*, *Juncus subulatus*, *Zygophyllum album*, *Nitraria retusa*, *Stipagrostis scoparia* and *Ruppia maritima*. Three endangered species occur: *Zygophyllum aegyptium*, *Plantago chamaeapsyllum*, and *Allium crameri*.

Ten mammal species are recorded, two of which are endangered: Fennec Fox *Fennecus zerda* and Sandcat, *Felis margarita*, both occur in the reserve.

244 species of birds have been recorded at Bardawil lagoon. Hundreds of thousands of migratory waterbirds pass through the area during autumn, including:

Greater Flamingo	<i>Phoenicopterus ruber</i>	13,100
White Pelican	<i>Pelecanus onocrotalus</i>	5620
Little Bittern	<i>Ixobrychus minutus</i>	2564
Night Heron	<i>Nycticorax nycticorax</i>	5487
Garganey	<i>Anas querquedula</i>	221,616
Avocet	<i>Recurvirostra avosetta</i>	6828
Little Sling	<i>Calidris minuta</i>	15,503
Little Tern	<i>Sterna alibifrons</i>	12,433
White-winged Black Tern	<i>Chlidonias leucopterus</i>	18,436

Millions of passerines and near passerines also migrate through Zaranik; large numbers of birds of prey are likewise known to occur on migration, particularly in the spring.

The following globally threatened species have been recorded: *Pelecanus crispus*, *Crex crex*, *Glareola nordmanni*, *Marmaronetta angustirostris*, *Aythya nyroca*, *Circus macrourus*, *Falco naumanni*, *Aquila heliaca*.

Eighteen species of reptile occur, of which five are threatened: *Chelonia mydas*, *Caretta caretta*, *Testudo kleinmanni*, *Varanus griseus*, *Chameleo chameleon*

Lake Bardawil is registered as a Ramsar site due to its international importance for waterfowl populations.

The situation at Lake Bardawil is somewhat conflictual, and previous proposals for managing the whole lagoon for its natural resources have failed due to lack of consensus between the principal stakeholders.

The EEAA remains committed to putting in place a lagoon management structure in the future in order to manage this Ramsar site of international importance. In the meantime, it has full legitimacy in the Zaranik Protected Area and the project will use this as a staging post on the way to a fully integrated lake management programme by demonstrating the value of managing natural resources, improving awareness of environmental issues and promoting economic activities, especially ecotourism. There exists a small window of opportunity to reinforce the status of the reserve, and the overall management of the lagoon, before the NSADP is fully implemented.

#### 1.2.1.3 Threats to the site and its biodiversity

Although Zaranik is protected by Egyptian law, its species continue to be threatened by the extension of coastal tourism development and hunting. The tourism development along the coast is almost exclusively for an Egyptian market, and leads to extensive land speculation. If expansion continues, it will shortly encroach on the buffer zones of the reserve and there is local pressure to construct even within the reserve boundaries, in defiance of Law 102/1994.

A temporary road was constructed along the sand bar which closed the outlet at Zaranik, the only natural outlet between Lake Bardawil and the sea. The closure of the outlet is detrimentally impacting the saltmarsh and fishing stocks at Zaranik. The outlet needs to be reopened to restore the ecological balance of the lagoon.

Other local activities which need to be assessed and integrated into an overall management programme for the area include: grazing by the Bedouin and salt extraction. Salt extraction pans make good habitats for birds, and are of mutual benefit to the local economy and wildlife.

Law 102/1983 specifically forbids hunting within the reserve and Law 4/1994 the hunting of endangered species; however, inadequate resources have prevented full application of the laws. Public awareness initiatives with local schools and villages, supported by the WWF "Across the Waters " programme, have built capacity to address nature conservation at a local level. The information centre at the reserve is fully functional.

The North Sinai Agricultural Development Project (NSADP) will rapidly increase the population of the area (forecast to more than quadruple when the scheme is completed), and pressures on this hitherto sparsely populated area are therefore expected to rise. For the time being there is no indication of the precise arrangements for sewage and solid waste disposal from the new settlements.

#### 1.2.1.4 Local actors

The Ministry of Public Works and Water Resources and the General Authority for Rehabilitation Projects and Agricultural Development/Ministry of Agriculture are the main Ministries responsible for implementation of the North Sinai Agricultural Development Project (NSADP). The former is in charge of constructing the El Salam Canal and the latter for land reclamation.

Ministry of Industry licenses the salt extraction activities of the public sector owned Nasser Salt Company.

The Lake Bardawil Fisheries Authority/General Authority for the Development of Fisheries Resources (*GADFR*)/Ministry of Agriculture is responsible for the management of the lagoon and its fishery.

The Coastguard, Ministry of Defense is responsible for security and controls illegal activities, such as smuggling along the coast.

Ministry of Development, Housing and New Communities (The Sinai Development Authority) is involved in urban development and infrastructure projects in North Sinai. In addition to physical works involving settlement and development, the Authority is also carrying out land development, livestock and agriculture projects.

Water and Environment Police/Ministry of Interior enforces fisheries and environmental regulations, such as hunting restrictions within the protected area.

Nature Conservation Section/Egyptian Environmental Affairs Agency (EEAA) manages the Zaranik Protected Area and is responsible for Lake Bardawil as a RAMSAR site.

The Environmental Management Sector/EEAA has responsibility for coastal and marine management, and water pollution abatement (eg. combating oil spills).

The North Sinai Governorate is the regional authority which includes the environment department, the tourism development department and the investment council

The Fishing Co-operatives look after and promote the interests of the local fisherman and fishing communities.

Local Bedouin chiefs of the local tribes are key social players in decision-making affecting land use in the area.

### 1.2.2 Lake Burullus

#### 1.2.2.1 Site description

Lake Burullus is a Ramsar site lying in the north-western Delta bounded more or less by the sea on one side, and the western branch of the Nile River (Rosetta branch) on the other. Estimates of its surface area vary; however, it probably covers approximately 595 km<sup>2</sup>, with 370 km<sup>2</sup> of open water and 225 km<sup>2</sup> of marsh/reclaimed agricultural land/aquaculture areas. The lake is 0.5 - 2.1 metres deep with a salinity of 3 - 11 ‰. In the past, the river flooded the area every year (October - January), but since the construction of the Aswan High Dam and the irrigation of vast areas in the Nile Delta, the lake is fed principally by drainage water from agricultural land, carrying with it fertilisers and pesticides.

The Ministry of Agriculture determines the distribution and quantity of rice grown in the Nile delta - normally this is limited to 1 million feddans (1 feddan = 0.43 ha), and there is an 800 LE /feddan fine for exceeding this limit. This

is not effective as the rice/wheat double cropping system is highly profitable and the fines are not at dissuasive levels. Water pricing policy is not currently being discussed at national level, however efforts have been made to reduce pesticide inputs - down from 23,000 tons in 1990 to 5 - 6000 tons in 1995, according to Dr. Siam (Director, Centre for Agricultural Economics). Cotton is the crop requiring most pesticide inputs, and in some Governorates there is a minimum threshold for cotton growing, in order to reach national targets.

As far as is known, there is no industry in the catchment, therefore the lake does not suffer the industrial pollution levels of other Delta lakes, such as Maryut and Manzala and heavy metal levels are reasonably low. Lake Burullus is therefore the least polluted of all the Delta lakes.

31,000 - 46,000 fishermen exploit the lake fishery which yielded 53,000 tons in 1995, according to the local fisheries department, with an estimated net annual income of around 85 million LE according to a recent study by NEI (1992). 70% of the catch is composed of *Tilapia*, and the structure of the fishery has been substantially modified since 1960, with a loss of high value euryhaline and marine species (five species of mullet, sea bream, etc.) as the lake has become fresher.

In real terms present-day fish prices are less than in the 1980's, but the price of nets and boats has increased. At 1992 constant prices fish today is worth 3 LE/Kg, compared to 5.3 LE/Kg in 1982 (weighted averages, NEI 1992).

There are 10 fishing co-operatives on the lake which meet regularly with the Governor. Private individuals with fish farms sell their produce outside this system. Most fish is sold locally, however some reaches Cairo (3 hours by car).

All of Lake Burullus has been declared a Protected Area under Law 102/1983 in May 1998, with the lake and the sandbar included within the boundaries of the reserve.

#### 1.2.2.2 Biodiversity

The biodiversity of Lake Burullus is not well known due to its long inaccessibility for security reasons. Most available information concerns birds which have been counted irregularly and little recent information is available on other groups. This preliminary list allowed 12 threatened species to be tentatively identified as present by the national working group established under the Project Development Fund (PDF) - two plants, one mammal, three birds, two reptiles, three invertebrates and one fish. A further two may also occur (in brackets):

*Sonchus macrocarpus*, *Zygophyllum aegyptum*, *Crocidura floweri*, *Crex crex*, *Aythya nyroca*, *Falco naumanii*, *Chelonia mydas*, *Caretta caretta*, *Hirudo medicinalis*, *Unio elongatalus*, *Eunicella verrucosa*, *Aphanius fasciatus*, (*Aquila clanga*, *Bufo kassasii*).

#### 1.2.2.3 Threats to the site/species

A secondary effect of the freshening of the lake is the rapid encroachment of *Phragmites* along the southern shore, which has reportedly covered 25 - 30% of the lake area (requires verification from satellite/aerial images). Reeds are harvested and sold for 3 LE per bundle, and are used for fencing, thatching and cattle fodder. Some water buffalo are grazed in the reedbed. Water hyacinth is present where the drainage canals reach the lake, however this species has low salt tolerance which prevents it colonising larger areas. It is not, therefore, presently a threat to the lake ecosystem.

Bird hunting is reported to be common, and quail nets are set all along the coastal dunes. Land reclamation for agriculture and for fish farms has reportedly affected 30% of the original lake area since 1970.

The hydrology of the lake is little known, however NEI estimates inflows of 50 - 80 m<sup>3</sup>/sec for the 6 drains on the southern side of the lake. The lake volume is around 525 x 10<sup>6</sup> m<sup>3</sup> and the turnover time is estimated at 2.5- 3 months. The outflow carries 850 x 10<sup>6</sup> m<sup>3</sup> to the sea each year through a single channel near Baltim.

The inflow of drainage water has increased phosphate levels by 4 times between 1970 and 1987, and one bloom of blue-green algae has been recorded at Baltim (probably linked to sewage outflows). The enrichment of the fishfarms with waste, urea and superphosphates further increases fertiliser flows into the lake.

Analyses show that the fishery is over-exploited, with a very high percentage of small fish in the catch. The head of the Chaklouba cooperative did not rule out the possibility of banning fishing for one or two days per week, but stressed the difficulty the fishing community would have during a prolonged closed season of one or two months, as the daily fish sales are essential for feeding their families.

With the construction of the International Highway along the Mediterranean coast, there are plans for tourism development and agricultural reclamation along the sandbar of the lake, which could without adequate mitigation measures lead to further pollution of the lake and destruction of sensitive habitats for fauna and flora.

Overall, the lake is severely eutrophic, and is saved from dystrophic crises only by four factors working cumulatively in its favour:

- the low retention time of the polluted water and the continuous outflow to the sea, which reduces nutrient concentrations
- the "export" of 53,000 tons of fish which removes nutrients from the system
- the presence of a large reedbed which facilitates nutrient uptake and nitrogen recycling
- most of the drainage of the highly polluted Kitchener Drain (which contains both sewage and industrial effluent) runs directly into the sea and not into the lake

The spread of fish farms, which add fertiliser to the water to increase fish productivity and drain nutrient-enriched water back to the lake, works against this positive trend.

If the current trends continue, Lake Burullus will probably follow the other Delta lakes into an increasing cycle of eutrophication, algal blooms and dystrophic crises. This would create an ecological situation which will be difficult and expensive to resolve. The 12 globally threatened species will almost certainly disappear if they have not already been lost due to other threats (eg excessive hunting).

For a future lake management strategy to be successful, it is essential to promote intersectoral planning in a concerted way, so that the effects of individual Ministry's proposals on other interest groups can be fully assessed and where appropriate modified when they cause unnecessary problems for other productive sectors. Decisions should be based on a fundamental understanding of the way the lake ecosystem and the local economy function and should all tend towards achieving a sustainable use of the lake's resources.

#### 1.2.2.4 Local actors

The local branch of the General Authority for the Development of Fisheries Resources (GADFR)/Ministry of Agriculture is responsible for management of the lake and its fisheries. This body also gives permits for the establishment of fish farms.

The Ministry of Agriculture determines the distribution and quantity of rice grown in the Nile Delta and fines farmers for exceeding this limit.

The Water and Environment Police, part of the Ministry of Interior, are responsible for implementation of the fisheries and environmental laws, as well as for security. They have three local stations, the one at Baltim is well-equipped with seven functioning boats. Each station depends hierarchically on Cairo, but will also respond to orders from the Governor.

The Ministry of Public Works and Water Resources maintains the drains into the lake and the channel to the sea (4 million LE to dredge the channel in 1995), and also proposed to convert Burullus into a large storage reservoir within

the framework of the Nile water conservation programme - this programme was apparently rejected following an impact assessment by National Environment Institute (NEI).

The Ministry of Rural Development intends to construct a sewage farm in El Burg (pop 7000) in the next two years, and to construct 50 plants in villages and towns of the Governorate over the next five, according to the local environment department. This will further improve water quality.

The Ministry of Development, Housing and New Communities is constructing the international coastal highway between Salum and Rafah. New bridges are planned over the outlet channel of the lake and over the river Nile near Rashid. The tourism section of the Governorate proposes to develop a marina for international tourism near Rosetta mouth, and national tourism resorts all along the sandbar. Their impact on the site has yet to be determined.

The Nature Conservation Section/EEAA is responsible for Ramsar sites and management of Lake Burullus as a Protected Areas. The Environmental Management Sector/EEAA coordinates coastal zone management and combats water pollution (e.g. oil pollution).

The environment department of the Kafr El Sheikh Governorate is currently weak, consisting only of one person. It does not yet have strong formal links with the central EEAA. The EEAA intends to establish a regional office in Tanta to deal with Kafr El Sheikh and two other Governorates as funds are not available for an EEAA office in each Governorate for the time being.

The Fishing Co-operatives look after and promote the interests of the local fisherman and fishing communities.

The Governor stressed the importance he attached to the lake and its fishery, and explained why a review of the reservoir project had been undertaken and the proposal ultimately rejected. Land reclamation has also been stopped, and no further permits are given for aquaculture farms. The Governor also recognises the importance of integrated management and was supportive of a proposal for a lake management authority, or committee, which would co-ordinate development activities within the area.

### 1.2.3 Matruh Sector

#### 1.2.3.1 Site description

The North Coast, the Mediterranean coastline to the west of the Delta is rapidly being built up, with tourism developments spreading along the coast road. The coastline of the Matruh Governorate is 280 km long and the coastal area covers some 8500 km<sup>2</sup>. Within this area there is already one relatively well-known protected area (El Omayad, 700 km<sup>2</sup>), and several other areas have been surveyed and are being nominated as protected areas, including a 2500 km<sup>2</sup> area between Matruh and Salum.

The coastal belt consists of a coastal plain and tableland. The coastal plain is fairly wide with calcareous sand dunes along the coast and series of long calcareous ridges running parallel to the sea with depressions containing salt marshes. The inland tableland is a relatively flat plateau containing rich steppe habitat. The five main micro-habitats contained within the reserve are: the coastal sand dunes, the inland ridges, the saline depressions, non-saline depressions and the inland plateau. The area has some of the highest annual rainfall in the country. The relatively high precipitation (up to 170 mm) gives rise to a rich belt of vegetation along the coast, which becomes gradually sparser as one travels south turning into the hyper-arid terrain characteristic of the Western Desert.

There are four agro-ecological zones from north to south - firstly, an agricultural belt in the coastal strip, where rainfall is highest, populations are settled and the area has good soils for irrigated fruit cultivation. Secondly, a mixed production strip ranging 5 - 15 km inland where the population is settled with a mixed sheep/goat herding-cum-barley farming system, thirdly, a rangeland strip where the lack of water is limiting for livestock and agriculture and fourthly, a desert ecosystem with true nomads. The town of Matruh has a population of 50,000 people and the total population of the area is estimated at 190,000, of which 85% are Bedouin.

Water is the main limiting factor for agriculture, and water harvesting techniques are being introduced. Livestock rearing is a major source of livelihood, and round 500,000 sheep and goats are present along with small numbers of camel, donkeys and cattle.

El Omayad Protected Area is situated in the eastern province of the North Coast 80 km west of Alexandria, Egypt's second largest city. The reserve was established in 1986 under Prime Ministerial Decree 671 and the boundaries were further modified by Decree 90/1996. El Omayad has been designated as a Specially Protected Area under the Barcelona Convention and is a Biosphere Reserve under the UNESCO Man in the Biosphere Programme. El Omayad occupies an area of 700 km<sup>2</sup> consisting of 31 km of coastline along the Mediterranean Sea and 26 km inland.

The current proposal from EEAA is to declare a number of protected areas to cover the remaining natural areas of the North Coast coastline, including areas well known for their richness, such as Ras El Hekma which was already identified by IUCN and the Mediterranean Action Plan as an internationally important area in 1993. These protected areas along with El Omayad will form the Matruh Protected Area Sector, which is also to include the proposed Qattara Protected Area to the south of the coastal plain.

### 1.2.3.2 Biodiversity

The Mediterranean coastal desert is a distinct habitat type and one of the richest terrestrial areas in biodiversity in Egypt. The area has a high flora diversity; over 1000 plant species have been recorded. 20% of these are considered to be nationally threatened and some are restricted range and globally threatened species. The North Coast also has some of the highest mammal and reptile diversity in the country, with a number of restricted range and globally threatened species occurring. 38 species of mammal and 35 species of reptile and amphibian have been recorded. In addition, the area has a rich invertebrate life with endemic insects and spiders. As for birds, the sector is situated on internationally important flyways for birds migrating between Eurasia and Africa, with the greatest numbers and species diversity occurring in the autumn when millions of migrants pass through the region. A key threatened species is Corncrake, *Crex crex* which is netted and trapped for the more the common Quail *Coturnix coturnix*.

#### Plants

<i>Echinops taeckholmianus</i>	<i>Allium mareoticum</i>
<i>Euphorbia punctata</i>	<i>Echinops taeckholmianus</i>
<i>Helianthemum sphaerocalyx</i>	<i>Zygophyllum aegyptium</i>
<i>Fumaria microstachys</i>	<i>Ebenus armitagei</i>
<i>Viola scorpiuroides</i>	<i>Zilla spinosa subs biparmata</i>
<i>Cynara cornigera</i>	<i>Pancratium sickenbergeri</i>
<i>Phalomis floccosa</i>	<i>Zygophyllum album</i>
<i>Colchicum ritchei</i>	<i>Muscari albiflora (syn Leopoldia albiflora)</i>

#### Mammals

Pallid Gerbil	<i>Gerbillus perpallidus</i>
Greater Jerboa	<i>Jaculus orientalis</i>
Four-toed Jerboa	<i>Aleactaga tetradactyla</i>
Cheetah	<i>Acinomyx jubatus</i>
Dorcas Gazelle	<i>Gazella dorcas</i>

#### Birds

Houbara Bustard	<i>Chlamydotis undulata</i>
Corncrake	<i>Crex crex</i>
Lesser Kestrel	<i>Falco naumanni</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Imperial Eagle	<i>Aquila heliaca</i>



## Reptiles

Loggerhead	<i>Caretta caretta</i>
Egyptian Tortoise	<i>Testudo kleinmanni</i>
Desert Monitor	<i>Varanus griseus</i>
Savigny's Agama	<i>Trapelus savignyi</i>
Roger's Snake	<i>Coluber rogersi</i>
Sand Boa	<i>Eryx jaculus</i>
Leopard Lizard	<i>Acanthodactylus pardalis</i>

## Insects<sup>3</sup>

<i>Zanitoschema pallidissima</i>	<i>Euzanitis alfierii</i>
<i>Acmoeodern pharao</i>	<i>Sphenoptera kasimi</i>
<i>Sphenoptera lottei</i>	<i>Buprestis humeralis</i>
<i>Ulidia fascialis</i>	<i>Cyrtosia tetragramma</i>
<i>Cyrtosia separata</i>	<i>Empidideicus mariouti</i>
<i>Cylindrothorax verrucicallis</i>	<i>Chalogenia theryi</i>
<i>Anisatamia ruficornis</i>	<i>Thyridantheax unicolor</i>
<i>Cytherea nucleorum</i>	<i>Meliboeus latesculptus</i>
<i>Conophorous aegypticus</i>	<i>Crocidium aegyptiacum</i>
<i>Atylosus farinosus</i>	<i>Empidideicus mariouti</i>

### 1.2.3.3 Threats to the site

As in other areas along the Mediterranean coast of Egypt the main threats to species are: habitat destruction and over-exploitation. The spread of secondary housing and tourist resorts along the coast is causing irreversible loss of sensitive areas. Quarrying and soil mining are increasing in the coastal belt. The calcareous ridge running parallel to the coast has been extensively quarried for construction materials, and this is transforming the natural landscape and destroying key habitats for fauna and flora. Uncontrolled bird hunting and the collection of rodents and reptiles for the wild animal trade all affect endangered species.

Parts of the coastal plain have also been designated for land reclamation. A canal has been built between Burg El Arab and Hammam - this is not yet operational but once water becomes available, existing rangelands will be cultivated. The army has been responsible for the clearing of land to grow crops, often without adequate rainfall which is causing soil erosion and other factors leading to the desertification of the area.

Over grazing is a significant problem affecting plant resources. Due to the increase in and settlement of the Bedouin population, there has been a corresponding increase in the livestock population putting greater pressure on the rangeland and causing serious degradation. While there have been studies conducted concerning rangeland management, there is a need for the implementation of a rangeland management programme. There is also over-collection of woody plants by the Bedouins to be used for fuel (wood is the preferred fuel for baking bread). In addition, there is over harvesting of some wild plants to be used or sold as remedial medicines, herbs and other products. All of these activities need to be discussed with local people, assessed for their impact on fauna and flora, and new management solutions developed within the framework of a management programme.

The El Omayad Protected Area does not have a management plan nor has there been effective enforcement of Law 102/1983 in the area due to limited manpower, technical and financial resources. Tourist developments, agricultural

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<sup>3</sup> Proposed by national working group; the lack of accepted lists of globally threatened species at regional level has precluded an assessment of their regional or global status

reclamation and hunting have all taken place inside the reserve contrary to the law. The most pristine habitats remaining are the inland plateau where development and population pressures are not as intense; however, much of the coastal habitats are under pressure from tourism and agriculture. Effective law enforcement is the key to illegal construction and hunting.

The reserve has developed good relations with the local Bedouin community which supports the Protected Area. A number of tribes live near El Omayad and utilize the reserve. The region has long been used for grazing and agriculture. The inland tableland of the reserve is important rangeland used by the local Bedouin communities to graze their livestock. There has been some conflict over land ownership with the tribes, but this issue seems to have been resolved to a large extent.

The core area of 100 ha in El Omayad has been completely protected from grazing since 1974. Another 3 plots, each of 25 ha, have controlled grazing at a level of 25% and 50%. The rest of the area is under traditional land use, with free range grazing. The core area which has not been grazed shows evidence of soil and vegetation regeneration and clearly indicates the differences between protected areas and overgrazed areas.

Relationships with the local Bedouin are important for issues concerned with habitat degradation linked to grazing. There is strong support from the Bedouin community to maintain these traditional rangelands.

An administrative building has been constructed at El Omayad with a research station and visitor accommodation. The staff consists of: a reserve manager, assistant manager, and the scientific advisor and his team from Alexandria University. Bedouin guards have been hired to warden the reserve and monitor activities in the area. For the past twenty years research, training and monitoring activities have been run in conjunction with the Faculty of Science at Alexandria University which has also been involved in the management of the protected area.

#### 1.2.3.4 Local actors

The Ministry of Development, Housing and New Communities is developing new tourist villages, and secondary housing. While many of the tourist villages are public sector owned, some are private.

The Ministry of Agriculture and Land Reclamation, through its principal Directorates operates throughout the coastal area to improve agriculture, promote cooperatives, provide credit and undertake research. All these services are based in Matruh. The Ministry is currently implementing a World Bank -funded "Matruh resource management project" which aims to reduce rural poverty, improve use of natural resources, assist in water harvesting and promote non-agricultural activities for women.

The Authority for the Development and Reconstruction of the North Coast (Ministry of Development, Housing and New Communities) is directly involved with rural development. It undertakes construction of rural roads, dykes and water cisterns.

Ministry of Public Works and Water Resources is building the Hammam Canal. The Ministry of Oil and Mineral Resources is promoting oil exploration in the area. The Ministry of Defense maintains security installations at Hammam and at Sidi Barrani and has been cultivating parts of the coast.

The Egyptian Environmental Affairs Agency (EEAA) through the Nature Conservation Section has jurisdiction over the El Omayad Protected Area and is nominating other protected areas to be declared on the North Coast. The Environmental Management Sector is responsible for coastal zone management and has implemented a number of pilot projects.

The Matruh Governorate controls quarrying rights and investment projects (through the investment council).

The University of Alexandria undertakes research programmes at the El Omayad Protected Area.

Access to natural resources is controlled by customary user rights established through the centuries by the Bedouin tribes residing in the area. There are a number of recognised traditional rules governing the use of land, water, vegetation and animals.

## 2. EXPECTED END OF PROJECT SITUATION

Developed and institutionalized a sustainable framework for the management, policies and protection of the wetland and coastal biodiversity, contributing to “ closing the Mediterranean circle” in close networking with the other participating countries.

Specific achievements will be:

- Legal, regulatory and institutional instruments and tools will have been established for the protection and conservation of threatened biodiversity in the coastal and wetlands areas of the Mediterranean basin.
- Regional networks will have been established for exchange of experiences and for mutual reinforcement of actions.
- On-site protection of globally significant biodiversity will have been achieved in the project sites, and actions will have been taken to broaden these initiatives beyond the selected priority sites to others in the country.
- Improved knowledge of biodiversity, habitats and ecosystems, interlinkages, distribution, threats and uses
- Improved capacity at the local and national levels to address biodiversity issues in lateral and integrated planning levels
- A solid legal framework for the protected/conservation areas will have been established
- A detailed assessment of threatened species and appropriate measures (Management Plan) for their preservation will have been developed
- A general public awareness campaign for stressing the importance of natural environment resources protection will have been undertaken
- Grassroots involvement in biodiversity protection will have been ensured.
- A monitoring system for globally threatened biodiversity will have been set up
- A series of training for biodiversity experts and other relevant participatory bodies will have been accomplished
- Local level management structures will have been established/strengthened to ensure sustainable long term management of the globally significant biodiversity in the selected sites
- Cross-sectoral structures and policies for the effective management of biodiversity and wetland and coastal resources will have been developed.
- Indirect benefits, such as human health improvements, employment creation, increased tourism, etc. will also be associated with this initiative.

The EEAA is currently strengthening its national network of nature protectorates and this project will promote and foster the development of a Mediterranean protected area network. The project will provide support to an existing site at Zaranik and the start-up costs for the new site at Lake Burullus. The project will also assist with the development of the Matruh Protected Area Sector, which will include an existing site at El Omayad and a new site to be established near Matruh. All of the sites selected harbour globally threatened species, and their protection therefore contributes to the global responsibility for maintaining genetic resources.

This will benefit the people of Egypt through the preservation of the country's national heritage, and will help to promote and improve attitudes towards nature conservation. Considering Egypt's key position on migratory pathways it is expected that these conservation benefits will also extend to other countries of the region.

## 3. TARGET BENEFICIARIES

The main beneficiaries are the people of Egypt who will gain from having a well-managed network of sustainable protected areas. Those who live in and around the sites, and those who harvest the natural resources (such as herders and fishermen) will benefit from the long term sustainable management of those resources. These are often people with precarious livelihoods.

Protected areas are important for regional development. It is recognised that international tourists are increasingly vacationing in or near to natural, unspoiled areas, many spending their holidays experiencing nature and observing wildlife. Egypt is seeking to increase nature based tourism (i.e. ecotourism) (in complementarity to the existing cultural and leisure tours) and the Mediterranean tourism sector will benefit from the proposed protected area network.

Other national beneficiaries include all the project participants: the EEAA, other governmental organizations, universities, scientific institutes, NGOs and national experts. At international level, exchanges between the countries involved in this project and the common approach to conserving part of the Mediterranean region's biodiversity will increase regional collaboration and the cross-fertilization of ideas and approaches. At the level of the individual participants this will broaden understanding of others problems, break down cultural or political barriers, and promote the feeling of belonging to a regional network faced with, and solving similar problems.

#### 4. PROJECT STRATEGY AND IMPLEMENTATION ARRANGEMENTS

##### **Strategy at regional level**

The priority sites identified in each country/Authority provide the basis for urgent actions to protect threatened biodiversity. They also provide a framework to which further sites can be added in future in order to address coastal and biodiversity issues in the country/Authority in accordance with the requirements of the Convention on Biological Diversity.

The project will develop, within the Mediterranean region, the instruments and management policies for wetlands and coastal zones whose conservation is of common interest to all the riparian countries. The experience from site level will feed into the activities for addressing root causes of biodiversity loss at national level and provide the case studies necessary for justifying the need for policy change. The combination of regional, national and local activities will allow the development of a set of legal, technical, regulatory and organisational frameworks which are individually specific but which serve to achieve a common goal.

The regional team will be a full technical partner to UNDP and the executing governments/authority, to provide advice on terms of reference, project planning through the TPR and to give technical guidance to both national and local actions. The main issues to be addressed at regional level are the horizontal themes which are relevant to all participating parties and where economies of scale can be made by undertaking these activities at regional level. The project will therefore emphasise exchange of the best available experience through technical assistance and networking, regional seminars on key topics of relevance to this project, training initiatives, and publication of guidance on management issues.

The regional activities will support the national actions by promoting exchange of experience within the region and by demonstrating how different countries (from north and south) have resolved or addressed similar problems. The regional team will also seek to promote information exchange concerning project activities at regional, national and site level through web-sites on the Internet.

A number of networks exist within the region and through their key positions in these technical and political networks, the Conservatoire du Littoral and the Tour du Valat are able to mobilise their members to support country actions, and to disseminate the results of the project in ways that will benefit stakeholders in other countries. Both organisations are committed to the sustainable development of coastal and wetland ecosystems within the Mediterranean region.

##### **Project implementation**

The implementation structure adopted for this regional project seeks to decentralise implementation to the competent national authority for all those actions which can be managed at local level. Therefore each beneficiary country directly manages funds allocated to UNDP by GEF through a government/Authority-executed project for the national actions in Albania, Egypt, Morocco and Tunisia. In the case of Lebanon, FFEM has allocated funds to a government executed project via UNDP Beirut and the French Embassy. For the Palestinian authority PAPP/UNDP in Jerusalem will be the implementing agency, and the Regional project will be managed through UNOPS.

This "subsidiarity principle" will lead to more effective local decision-making and improved administrative efficiency. In order to achieve the added value from the regional initiative, and to avoid repeating similar errors in each country/Authority, a Regional Facilitator to organise exchange of experience and information flow for all the technical aspects of the national programmes is absolutely essential, backed by an Advisory Committee.

## **The Regional Advisory Committee**

In order to maintain the coherence of the regional approach capitalising on the experience of each of its participating members, it is essential to maintain a common regional vision through the constitution of a Regional Advisory Committee. This committee will, at the highest level, ensure that this regional vision is maintained, hence providing synergy to each of the national actions (ToR in Annex 8).

The composition of the Regional Advisory Committee will include:

- One representative of each of the Ministries or entities in charge of the environment in each country/Authority (if possible the Chief or Assistant Chief of the delegation to the MAP meeting)
- The National Project Coordinator;
- GEF/UNDP,
- UNOPS
- FFEM/AFD,
- French Environment Ministry;
- The Coordinator of the Mediterranean Action Plan or his representative;
- The Secretary General of the Ramsar Convention or his representative.
- Tour du Valat
- Conservatoire du Littoral

The *Regional Advisory Committee* may invite the participation, at their own expense, of other partners or qualified authorities: European Union, IUCN, WWF or any other person whose presence might be considered appropriate.

The expenses incurred by the members of the *Regional Advisory Committee* for their participation in the Committee's annual meeting are charged to their respective national budgets.

## **The Regional Facilitator**

The need to establish networks linking all the actors in each country/Authority and the organisation of training, exchanges and the monitoring of coherence requires the establishment of a regional focal point : the regional facilitator is recruited to this effect.

The facilitator will assist each government/authority to reach the objectives fixed within the framework of the project in collaboration with the different national UNDP representations and those of the French GEF (as appropriate). This task is essentially a technical one, and implies no administrative control over expenditure of the national/Authority components. The regional facilitator will monitor the use of UNDP funds and will report on the implementation of planned project activities.

He/she will maintain direct contact with all project participants in each country/Authority at local and national level, including all concerned Ministries and agencies, the UNDP office and the local representatives of French GEF. The national coordinators will provide the Regional Facilitator with all the information necessary to his/her mission. They will transmit a copy (in paper and digital form) of all the technical studies, project reports, minutes of meetings from local site and national steering committees, and any other documents required for efficient monitoring of project activities. The ToR are outlined in Annex 5 to this document.

At the end of the project, the results from the whole project are reviewed at regional level and a summary of case studies and lessons learned is made by the Regional Facilitator. This summary will be distributed throughout the region through existing networks.

## **Roles of Tour du Valat and Conservatoire du Littoral.**

The tasks entrusted to the Regional Facilitator will be numerous and varied. He/She will be supported in his/her activities by a team of experts in training, wetland management, biodiversity, integrated management of coastal areas and land-use policies. All of these experts will make their technical knowledge available to the Facilitator to support the development of regional activities and will also provide access to their own regional expert networks. The technical coordination of this team of experts will be ensured by Tour du Valat/MedWet for the wetland component and the Conservatoire du Littoral for matters pertaining to coastal management and the development of land policies.

There are numerous networks in place in the Mediterranean region and, thanks to their central position within those technical and institutional networks, the Conservatoire du littoral and the Tour du Valat Centre are able to support the project by calling on their counterparts throughout the region. These two not-for-profit organizations were created for the purpose of conducting integrated actions for the development of coastal areas and wetlands and to protect biodiversity

### *4.2 Project strategy at national level*

After a detailed assessment of the local threats to biodiversity on each of the selected sites, the project will identify and apply the innovative tools required for integrated management, including particularly the use of land policies complementing the regulatory system and through formulating adequate policies for wetland management. It will endeavour to develop those management systems and to build capacity both at the national and local levels, and will focus on awareness-raising, information and participation of the various stakeholders, especially at the local level, whose involvement in the project will create the conditions required for its success and replicability to other sites along the national coastline and in the Mediterranean region.

Innovative management and concertation policies will be implemented, beginning at sites with special significance for global biodiversity, whose protection could not be initiated rapidly without GEF support, as national resources are required elsewhere for extremely urgent interventions. These will serve as prototypes to be replicated at the national level, similar to those implemented in the other countries involved in the GEF project and will provide models for the entire Mediterranean basin.

These national actions are only one of the sub-sets of the regional action which will ensure the establishment of networks, create common information and evaluation systems, arrange for training activities and provide the required technical coordination.

Environmental and biodiversity strategies have highlighted the conservation of nature and natural resources as a national priority. National programmes of action in the National Biodiversity Strategy include:

- Institutional Development and Capacity Building for Nature Conservation
- Protected Area Identification and Management
- National Biodiversity and Nature Heritage Inventory and Monitoring
- Natural Heritage Resources Management
- Hunting Management
- International Conventions Compliance
- Public Awareness, Education and Involvement for Nature Heritage
- Wetlands Management
- Marine and Coastal Zone Management
- Arid Lands Management
- Nature-based Tourism Management and Development

The GEF project addresses components of nearly all the national programmes.

Among the priorities in the National Biodiversity Strategy is to expand and strengthen the national protected area network. The Nature Conservation Section (NCS) within the Egyptian Environmental Affairs Agency (EEAA) has a mandate from the Prime Minister to extend the area covered by protected areas to 15% of the national territory by

2005. Initiatives are underway to declare and/or manage sites in the Sinai, the Western Desert and the Red Sea with financial support from the European Union (EU) and other donors. The GEF project will help two Mediterranean sites to be added to the network and strengthen the management of two existing areas.

Expansion of this nature requires considerable capacity building, and the GEF project will contribute to programmes already underway. The project will be managed in a concerted manner to compliment, not duplicate on-going initiatives, in particular, to reinforce and augment the EU supported institution building program for the NCS.

For effective coastal zone or wetland management it is essential to promote and implement inter-sectoral planning, yet many Ministries in Egypt operate in an entirely sectoral manner. Protected areas legislation in Egypt has a considerable advantage as it not only gives the Nature Conservation Section a coordinating and decision-making mandate within the boundaries of the protected area, and in the area adjacent, but also provides for use of natural resources by local people where this can be done in a concerted and sustainable manner in harmony with the objectives of the protected area.

Wetland management is another national priority highlighted in the National Biodiversity Strategy. The project will seek to promote the development of institutions and tools to improve management of Lake Burullus and its catchment. While the Zaranik Protected Area currently covers only a small part of the eastern end of Lake Bardawil, at a strategic level the project will seek to encourage through demonstration projects and consensus building the development of the holistic management of the entire lake.

Improved compliance to the provisions of international and regional conventions has also been identified as a priority, in particular with regard to Biodiversity, Ramsar, CMS and the Barcelona Convention (i.e. Specially Protected Areas Protocol). Both Burullus and Bardawil are Ramsar sites and the project will help the country comply with its obligations under the convention.

#### *4.3 National implementation arrangements*

A small project management unit in Cairo, consisting of a national coordinator, a technical advisor, and a secretary/accountant, will report to the Director of the Nature Conservation Sector (NCS) and maintain clear and explicit operational links with ongoing European Union (EU) and other related donor projects. The international technical adviser will support the appointed national coordinator at the outset of the project in order to assist in start-up and facilitate coordination.

An unit, consisting of a coordinator and a secretary, will be established at the NCS to oversee implementation of activities related to the development of the National Wetland Strategy and other cross-sectoral programmes at the national level.

The NCS will implement the project through the establishment of two new Protected Area Management Units (Burullus and Matruh), and through the reinforcement of one existing unit at Zaranik. Each unit will have a full local management structure, but will be linked with the central Protected Area Department in Cairo.

Within this project a range of biodiversity and other studies are planned in order to assist in planning the management of the protected area. The Research/Monitoring Section of the NCS along with the Biodiversity Mobile Unit will undertake the surveys and monitoring programmes. The EU is providing the equipment for the mobile unit, and the GEF project will help to develop and strengthen the unit's wetland monitoring capacities. Universities, institutes and national experts will be involved whenever necessary and appropriate to carry-out research and other work and preference will be given to those bodies and individuals locally based or having a past history of involvement in the area.

Field monitoring data will be incorporated into the central GIS data-base in NCS in Cairo. Selection of personnel for training at local and international level will be approved by the Director of the NCS based on the approval of the head of the Agency.

The national activities will draw heavily on existing methodologies for wetland conservation developed by the MedWet network of partners - World Wide Fund for nature, Wetlands International, Institut Conservaço de Natureza (Portugal) Greek Wetland Centre, and Tour du Valat - in the fields of public awareness, inventory, mapping and

training.

The Ramsar Bureau will assist in identifying competent international consultants able to provide support to the Agency in developing policies provided for under the Convention, particularly the National Wetland Strategy.

#### 5. REASONS FOR ASSISTANCE FROM GEF

The narrow Mediterranean coastline and its associated wetlands is a limited area increasingly colonised by human presence. The most frequent, and irreversible, trend is urbanisation which wipes out the potential for biodiversity and natural habitats.

This occupation of space is virtually irreversible as a return to natural habitats is largely impossible. At the other end of the spectrum, however, other dangerous threats, for example pollution, can be reversed with appropriate resources. It is therefore essential to develop planning and management policies, natural resource management and sustainable development initiatives that aim to limit the loss of natural habitats, especially wetlands.

All the beneficiaries of this project have ratified the Convention on Biological diversity, and the Ramsar Convention. This project also complies with principles of biodiversity protection, the GEF operational strategy and the programmes on coastal, marine and freshwater agreed at the second conference of the parties to CBD (Jakarta, Indonesia, Nov 1995).

The incremental contribution of the GEF and FFEM will accelerate the implementation of policies whose costs could not otherwise be carried by the states alone, considering the substantial funds committed by them to address existing brown issues.

In addition, the development of pilot management methods for the coastal zone, and the development of structured exchanges through a regional network, will allow a number of Mediterranean countries to avoid the need to reinvent the wheel in addressing their own national issues, hence promoting accelerated replication of experience gained elsewhere.

#### 6. SPECIAL CONSIDERATIONS

During the implementation of the project, specific emphasis will be put on strengthening the dialogue, information exchange and cooperation among all the relevant stakeholders, including central and local governmental, non-governmental, academic, and private sectors.

The ultimate criteria of success will be how the results of the project will be incorporated in the broader development goals of Egypt. The project tries to address this by establishing an institutional framework for cooperation and involvement of all the relevant partners.

#### 7. CO-ORDINATION ARRANGEMENTS

Within the Egyptian Environmental Affairs Agency (EEAA), it is essential to continue to improve inter-service collaboration on issues of mutual concern, especially establishing clear linkages between coastal zone management and nature conservation activities. Cross-sector linkages also need to be developed and strengthened. In putting in place a National Wetlands Strategy, the Agency will need to draw on a wide range of expertise, and ensure that other Ministries, as well as other governmental and non-governmental organizations participate actively in its design. This is important to promote support for the strategy and assure its approval at high level, as well as to facilitate its future implementation.

At the Mediterranean level, beside the constant information exchanges between the six participating countries/territories, the project will establish relations with the Mediterranean Commission on Sustainable Development (MCSDD) of MAP, METAP, and the various programmes undertaken by a number of donors, as well as with initiatives targeting the Mediterranean region such as those undertaken by IUCN or conducted by the WWF. These networking activities will be one of the missions assigned to the Regional Facilitator



## 8. COUNTERPART SUPPORT CAPACITY

It is expected that the EEAA will appoint a national project coordinator for the project period through a national selection process. The ongoing EU project provides a substantial base within NCS on which to build and where cross-fertilisation and economies of scale, for example on training, can be achieved.

EEAA has financial resources for the long term sustainability of the project through the Environment Fund and other budget allocations, and will contribute to developing site actions, employing personnel, covering running costs and providing infrastructure at each of the project sites (see Section E. National contribution).

## C. DEVELOPMENT OBJECTIVES

The project's overall development objective is to conserve globally endangered species and their habitats, recognizing nature conservation as an integral part of sustainable human development while improving the capacity of governmental and non-governmental agencies to address biodiversity conservation issues.

## D. IMMEDIATE OBJECTIVE(S), OUTPUTS AND ACTIVITIES

### 1. Promotion and capacity building for the development of national policies and tools to address the policy-related root causes of the loss of wetland and coastal biodiversity.

**Output 1.1** Establishment of a national wetland strategy/ action plan as required under the commitments to the Ramsar Convention.

Activity 1.1.1 Conduct an LFA workshop with all pertinent stakeholders to identify the necessary elements of a national wetland strategy and come up with a first draft to be further developed and circulated to the participants for their comments.

Activity 1.1.2<sup>4</sup> Establishment of a subgroup from the National Advisory Committee for Natural Heritage for consultation on wetland issues, and to guide development of a national wetlands policy. The National Advisory committee contains representatives from the pertinent<sup>2</sup> ministries, NGO's, research institutions and national experts in the field.

Activity 1.1.3 Collect and evaluate all existing studies and information on the selected project sites, and identify the gaps existing in knowledge.

Activity 1.1.4 Undertake the necessary multi-sectoral case studies (legislative, stakeholder/ conflict analysis and cost/ benefit analysis) on specific sites, to fill the existing gaps, with the participation of central and local government services.

Activity 1.1.5 Based on the results, make proposals to resolve conflicting policy positions between ministries for discussion by the National Advisory Committee subgroup on wetlands.

Activity 1.1.6 Provide a summary of the key findings of existing and conducted research to improve awareness of local and national decision-makers and organise two workshops during this process. Mediatise the findings.

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<sup>4</sup> Activities will be numbered when proposal is definitive

<sup>2</sup> Representation will be comprised of the following fields, among others: agriculture, industry, water management, irrigation and drainage, planning and new communities development

**Output 1.2** Establish a national wetland data-base, using the existing MedWet methodology and software as the basis for monitoring the nation's wetlands. This information will be made more widely available to, among others, university students, research institutes, bodies involved in water management and entities required to perform EIA's. Both hard and soft copy versions of data will be made accessible.

Activity 1.2.1 Training course on how to use the data-base (data input and output) and the extraction of data relevant to Ramsar reporting requirements.

Activity 1.2.2 Maintenance and updating of the data-base.

Responsible party: NCS

**Output 1.3** Through the central NCS GIS system analyse satellite and aerial images and develop monitoring of future land-use changes in and around the Mediterranean protected areas.

Activity 1.3.1 Acquire and analyse satellite images to provide base maps of each site at appropriate scales for use in plotting biodiversity, land-use and threats, and for monitoring change.

Activity 1.3.2 Design GIS system outputs to respond to manager's needs for local protected area management.

Activity 1.3.4 Regularly maintain and update GIS component on selected wetland sites, and disseminate information generated.

Responsible party: NCS

**2. Protection and removal of root causes in key demonstration sites selected in view of their global significance and of the variety which they present in terms of threats and accompanying actions.**

**Output 2.1** Preliminary site diagnosis for Lake Burullus including field assessment of biodiversity distribution (plants, reptiles, amphibians, birds, fish, mammals), water quality and socio-economic activities. All surveys will assess in detail the threats and constraints on the globally threatened species. Results will be mapped on the central GIS data-base.

Activity 2.1.1 Draw up a clear reference base map (with grid squares) on which all other species/habitats will be mapped for inclusion in the GIS.

Responsible party: NCS GIS manager

Activity 2.1.2 Define the catchment basin for Lake Burullus and evaluate drainage flows to the lake, assessing the effect of different crop patterns and other trends on drainage flows.

Activity 2.1.3 Assess the water quality of the inflowing drainage water (pesticides, nutrients, heavy metals).

Activity 2.1.4 Assess water quality in the lagoon, distribution/productivity of submerged macrophytes and nutrients/redox of the sediments as a measure of eutrophication, and establish a monitoring system for relevant parameters, drawing on international expertise.

Responsible party: This component may be subcontracted to National Water Research Center/ Ministry of Public Works or the Monitoring Department, Environmental Quality Sector, EEAA.

Activity 2.1.5 Update the existing literature on the ecology and species present in the lake ecosystem, and its hydrology based on the 1994 monographies.

Activity 2.1.6 Describe the principal vegetation types, plot the distribution of globally threatened plants and design a monitoring system for these species.

Activity 2.1.7 Describe the mammals, fish, amphibians and birds of the area, plot the distribution of globally threatened species and design a monitoring system for these species.

Activity 2.1.8 Describe the distribution of globally threatened invertebrates and design a monitoring system for these species.

Activity 2.1.9 Map the land ownership of the area.

Activity 2.1.10 Undertake a Participatory Rural Appraisal (PRA) of socio-economic activities in the area and make proposals to improve and sustain local livelihoods.

Responsible party: NCS

**Output 2.2** Preliminary site diagnosis for Zaranik and Matruh Sector (El Ommayad and Matruh Protected areas) including assessment of biodiversity distribution (plants, reptiles, amphibians, birds, mammals), and socio-economic activities. All surveys will assess in detail the threats and constraints on the globally threatened species and on the ecosystem that supports them. Results will be mapped on the GIS data-base (Activity 1.3.1 above).

Activity 2.2.1 Map the principal vegetation types, plot the distribution of globally threatened plants and design a monitoring system for these species.

Activity 2.2.2 Describe the mammals, birds, fish and reptiles of the area, plot the distribution of globally threatened species and design a monitoring system for these species.

Activity 2.2.3 Undertake a Participatory Rural Appraisal (PRA) of socio-economic activities in the area and make proposals to improve and sustain local livelihoods.

Activity 2.2.4 Assess water quality, nutrients and redox in the sediment, map the distribution and productivity of submerged macrophytes and design a monitoring programme for these components (Zaranik/Bardawil only).

Activity 2.2.5 Inventory of existing land-use practice and land-ownership including a map of the land ownership in the area.

Responsible party: NCS

**Output 2.3** Establish a site management process, coordinated by the PA manager, to address the local threats undertaken through, and in collaboration with, the local stakeholders through regular consultative fora.

Activity 2.3.1 Conduct site specific interdisciplinary case studies to identify the key resources, environmental threats, stakeholders and potential conflicts. The logical framework approach may be adopted to ensure that all issues are clearly identified and to build consensus among stakeholders.

Activity 2.3.2 Identification of infrastructure requirements for the protected area (implementation : Activity 2.5.1 & 2.5.2 below).

Activity 2.3.3 Designation of a consultative committee for each site, for the PA manager to draw upon for exchange and definition of agreed medium and long term management objectives. The consultative committee will consist of representatives from the relevant government services and local actors, local and national experts and chaired by the PA manager. The PA will also regularly draw upon the Wetland Advisory Group, which will be formed from the Scientific Advisory Group, as well as regional scientific advisors, on scientific and technical site-specific concerns.

**Director NCS (Cairo)**

**Counterpart (Cairo)            Technical adviser (Cairo)**

**Wetland Advisory Committee (Cairo)**

**PA Manager**

Site level

**Consultative Committee**

Ministry of Tourism

Ministry of Irrigation

Ministry of Agriculture

Ministry of Fisheries

Ministry of land reclamation

Ministry of New Housing

Others as appropriate

NGOs

Local economic actors

(e.g. fishing cooperatives)

Activity 2.3.4 Enforcement of laws to address identified threats, such as illegal hunting of bird species, construction on the perimeter of the reserve, illegal grazing etc

Activity 2.3.5 Hold a LFA workshop on the problems of each site including all involved ministries, local people, NGOs, concerned municipalities, economic actors and universities to discuss resolution of the threats to the site.

Activity 2.3.6 The Protected Area Manager, in cooperation with the local and national experts, will assess in detail the different threats to the site and its species (from Activity 2.3.1 above), implement those actions which are clearly covered by existing legal texts and undertake negotiations with relevant parties to resolve those requiring inter-ministerial agreement or arbitration.

Activity 2.3.7 Recruitment of rangers to assist in public awareness activities and in surveillance of land-use within each area.

Activity 2.3.8 Establish an agreed urban development strategy in cooperation with local concerned authorities as part of the wetland management plan, to ensure that no building over sensitive areas for biodiversity takes place.

Responsible party: NCS

**Output 2.4** Implementation of proposals to promote compatible economic activities at the site to benefit the local communities, especially eco-tourism, grazing and sustainable fisheries, building on the results of the PRA (Activity 2.2.3 above)

Activity 2.4.1 Assess the impact of grazing on vegetation communities and define mutually agreeable objectives for carrying capacity in collaboration with the local herding community.

Responsible party: NCS

Activity 2.4.2 Evaluate whether the fisheries at Burullus/Bardawil are sustainable, propose a sustainable yield and management system for fishing activities and make management proposals on water circulation management and salinity levels required to maintain the fishery and the economic livelihoods of those that depend upon it.

Responsible party: National Oceanographic and Fisheries Research Institute

Activity 2.4.3 Assess the ecotourism potential for each site and propose the appropriate infrastructure if this activity is considered viable.

Responsible party: NCS

**Output 2.5** Implement the protected area infrastructure including a headquarters building, information focal point, fully equipped offices, boundary delimitation, signs, bird hides, information leaflets, visitor's centres, as recommended by the eco-tourism development plan and according to central policy on protected area infrastructure.

Activity 2.5.1 Construction of a centre at Burullus and Matruh (already exists at Zaranik and El Omayad).

Activity 2.5.2 Equipping of centre and office space to provide a functional base and focal point for information. Provision of transport as appropriate.

Responsible party: NCS

**Output 2.6** Public awareness activities to sensitise local people and decision-makers of the importance of the three sites, and the natural environment in general.

Activity 2.6.1 Establish how local people currently view the project sites, as an aid to designing the most appropriate targets for future sensitisation activities.

Activity 2.6.2 Produce information materials, stickers, t-shirts and posters on the sites, and their importance for biodiversity.

Activity 2.6.3 Organise thematic field camps for children, university students and youth centers on biodiversity themes (bird migration, plants, reptiles, etc).

Responsible party: NCS/NGOs with support from WWF Mediterranean.

**Output 2.7** Establishment of a monitoring system for biodiversity (all sites) and hydrology/water quality (Burullus/Bardawil) in association with relevant bodies.

Activity 2.7.1 Monitor water quality and distribution/productivity of submerged macrophytes as indicators of trophic status (Bardawil/Burullus).

Responsible party: NCS, Wetland Advisory Group (WAG)

Activity 2.7.2 Based on the results of the initial biodiversity survey (Activity 2.3.1 above), monitor globally threatened plants, reptiles, mammals and amphibians at appropriate frequency and at least once in the final year of the project. Include these in the GIS data-base.

Responsible party: NCS, Wetland Advisory Group (WAG)

**Output 2.8** Establish a finalised, budgeted, management plan with long and medium term management objectives.

Activity 2.8.1 Bring together all the experience and studies undertaken during the early years of the project and produce a medium term plan for future activities in and around the site. This plan should be developed with the help of the consultative committee, and be disseminated to all local stakeholders to ensure commitment and support.

Responsible party: NCS

**Output 2.9** Management plan implementation including measures for sustainable livelihoods and ecotourism.

Responsible party: NCS

3. **Contributing to "closing the Mediterranean circle" in terms of biodiversity protection and sustainable management of wetlands and coastal zones through cost-effective networking for transfer of lessons, interchange and training.**

**Output 3.1** Training programmes and technical exchanges between protected area managers, EEAA staff and scientists.

Activity 3.1.1 Definition of training needs for the three sites, their managers and the permanent working groups as an accompaniment to the planned implementation of project activities.

Responsible party: NCS/Regional coordinator

Activity 3.1.2 Training in natural area management methods.

Activity 3.1.3 Training in establishment of monitoring procedures.

Activity 3.1.4 Implementation of training activities as a contribution to moving forward the management actions.

Activity 3.1.5 Participation of two or three staff members in the five regional seminars organised by the regional coordination team.

Activity 3.1.6 Organisation of a regional seminar for all other participating countries in or near one of the project sites.

Activity 3.1.7 Placement exchange with other protected areas of the region to share knowledge and experience.

Activity 3.1.8 Linking of the coordination unit and the protected areas to the regional web-site initiative.

Activity 3.1.9 Provision of information to the biodiversity clearing house mechanism.

Activity 3.1.10 :Participate in regional advisory committee meetings

Responsible party: NCS

**E. INPUTS**

**E.1 Personnel**

**E.1.1 National Contribution - in Kind**

	<b>National Contribution</b>	<b>\$/ M</b>	<b>M/M</b>	<b>Total</b>
<b>Central</b>				
Wetland Unit Coordinator	Local Staff Salary	2,000	60	120,000
Wetland Unit Secretary	Local Staff Salary	700	60	42,000
Sub- total				162,000
<b>Zaranik</b>				
Protected Area Manager	Local Staff Salary	2,000	60	120,000
Accountant/ Secretary	Local Staff Salary	800	60	48,000
4 Rangers	Local Staff Salary	900	240	216,000
Sub-total				384,000
<b>Burullus</b>				
Protected Area Manager	Local Staff Salary	2,000	60	120,000
Accountant/ Secretary	Local Staff Salary	800	60	48,000
4 Rangers	Local Staff Salary	900	240	216,000
Sub-total				384,000
<b>Matrouh Sector</b>				
2 Protected Area Managers	Local Staff Salary	4,000	120	240,000
2 Accountant/ Secretary	Local Staff Salary	800	120	96,000
4 Rangers	Local Staff Salary	900	240	216,000
Sub-total				552,000
<b>TOTAL</b>			<b>1320</b>	<b>1,482,000</b>

### E.1.2 GEF Contribution - National Project Staff

	\$/ M	M/M	Total
<b>Central</b>			
National Project Director	2,500	60	150,000
Project Accountant/ Secretary	800	60	48,000
GIS Specialist	1,500	24	36,000
Driver-Messenger	300	60	18,000
Sub- total			
<b>Zaranik</b>			
Technical Adviser (monitoring, studies)	1,500	24	36,000
Community Adviser	1,000	20	20,000
Information Adviser	1,000	20	20,000
Sub-total			
<b>Burullus</b>			
Technical Adviser (monitoring, studies)	1,500	24	36,000
Community Adviser	1,000	20	20,000
Information Adviser	1,000	20	20,000
Sub-total			
<b>Matrouh Sector</b>			
2 Technical Advisers (monitoring, studies)	1,500	36	54,000
Community Adviser	1,000	20	20,000
Information Adviser	1,000	20	20,000
Sub-total			
<b>TOTAL</b>		<b>408</b>	<b>498,000</b>



**E.1.3. GEF Contribution - Project Consultants**

	<b>Consultants</b>	<b>mths</b>	<b>unit cost \$\$</b>	<b>total</b>
	National biodiversity specialists	40	2500	100000
	Hydrology/water quality	12	2500	30000
	Ecotourism	4	2500	10000
	Participatory rural appraisal	6	2500	13200
	Fisheries assessment	3	2500	7500
	Lagoon mgt specialists	4	15000	60000
	Management planner	2	15000	30000
	Ecotourism (Intn'l)	1	15000	15000
	Wetland strategies	3	15000	45000
	Participatory rural appraisal and follow-up	3	15000	45000
	Subcontract			
	Awareness activities	1 NGO per site	\$ 25000 per NGO	75000

## E.2. Infrastructure and equipment

<b>INPUTS</b>		<b>GEF \$\$</b>	<b>National</b>
			<b>Contribution</b>
			<b>LE</b>
<b>Central level</b>	Aerial Photos	5000	
	Satellite Images	5000	
	3 Computers + software ( <i>including for Wetland Unit</i> )	7000	
<b>Zaranik</b>	Office Support Facilities	5000	
	4X4 vehicle	28000	90000
	2 off-road motor bicycles		80000
	Management operations	110000	550000
	Communications	18000	5000
	Misc. eqpt. (monitoring)	7000	
	Computer and software	3500	
<b>Burullus</b>	Construction		1500000
	Office Support Facilities	40000	
	4X4 vehicle	28000	90000
	Management operations	130000	500000
	Communications	18000	5000
	Computer + software	3500	
	2 Zodiac + outboard	10000	
	Monitoring equipment	10000	
<b>Matruh Sector</b>			
	Construction		1500000
	Office Support Facilities	35000	
	2 4X4 vehicle	28000	90000
	4 off-road motor bicycles		160000
	Management operations	210000	500000
	Communications	18000	5000
	2 Computer + software	3500	
	Monitoring Equipment	10000	
	<b>Total</b>	<b>732,500</b>	<b>5,075,000</b> <b>(=US\$1,495,726.5)</b>

### E.3. National In-Kind Contribution - Infrastructure and Equipment

Inputs		Contribution LE (in Kind)
Central Level	Office Space	250,000
	GIS Station (EU)	X

### F. RISKS

Adapting legislation and regulation concerning land-use rights is a longterm and complex process. The creation of new structures specialized in the protection of the coastline may also generate opposition within the administration and therefore requires substantial commitment from government to succeed. The support of local people and of the media may also contribute, and in this sense the image and international nature of the project is an important feature.

The active participation of local people and local government in decision-making on land-use and water issues is essential as it is at this level that the main pressures on remaining natural areas occur. This purpose is rendered difficult by lack of resources to allow full participation and the weakness of analytical, consultative and inter-administrative systems.

In addition, effective coordination between all administrative levels (local and national) is essential for project success and this will require a sustained effort from all project participants and strong political will. Building on the interest shown by all the participating countries/authority, the project preparation process has nevertheless improved the awareness of these issues and attention should remain focussed on promoting this in each of the project sites.

### G. PRIOR OBLIGATIONS AND PRE-REQUISITES

**Prior obligation :** If not declared by the time the project document is signed, studies and other activities will be undertaken to promote the declaration of the protected area at Matruh, but the protected area will be officially declared and their boundaries delineated, before any investments in local site management can be made. Work will proceed immediately on the existing Protected Areas at Burullus, Zaranik and El Omayad.

Assistance for the project will be provided only if the obligations and prerequisites stipulated above have been fulfilled or are likely to be fulfilled. When anticipated fulfilment of one or more prerequisites fails to materialize, UNDP may, at its discretion, either suspend or terminate its assistance.

### H. PROJECT REVIEW, REPORTING AND EVALUATION

In view of the regional nature of the project and the specific linkages between the 6 countries/territories involved, special conditions for monitoring and reporting have been established.

As has already been described in the Regional Project Document, the Regional Facilitator will provide assistance and advice and will ensure the networking of the national projects. The Regional Facilitator will be responsible for drafting and submitting various technical reports to GEF/UNDP, to UNOPS and the FFEM. In addition the Regional Facilitator will also provide comments to national *Project Reviews* and will also attend the annual meeting of the Regional Advisory Committee.

#### *Project Review – PR (also called “TPR “ in regular national projects)*

This project will be subject to annual Project Reviews (PR) which will take place at least every twelve months, with the first such meeting to take place within the first twelve months following actual project start-up.

The participants to these Annual Project Reviews (APR) will include: representatives of the Government, the implementing agency, UNDP, and the Regional Facilitator. Upon the initiative of the representatives of the

Government, the implementing agency, UNDP, two national coordinators for other countries or any other national or international actor participating in the regional project may be invited to attend.

#### ***Annual Performance Report***

The Project Manager will be responsible for preparing and submitting to each Project Review (PR) an Annual Performance Report (APR). Other evaluation reports may be requested, as needed, during the implementation of the project. Each project partner (representatives of the Government, the implementing agency, UNDP, the Regional Facilitator, as well as the GEF/RBAS New York) will be provided with copies of the Reports before the Project Reviews (PR).

The APRs from each national project component will be submitted to the Regional Facilitator, so that she/he may write a combined and summarized APR for the entire project to be submitted to GEF/RBAS.

A project completion report will be prepared to be discussed at the last Project Review (PR). This report will need to be prepared in advance, so as to enable the implementing agency to provide technical inputs and to make comments, at least four months before this last tripartite review..

#### ***Mid-term Evaluation***

The project will be subject to a mid-term evaluation, i.e. during the third year after actual project start-up. The organization, the terms of reference and the timing will be determined after consultation with the participants in the APR preceding the mid-term evaluation.

The consultants who will carry out this evaluation exercise will normally be selected from the GEF STAP roster after consultation with project partners. This evaluation will be independent. Particular attention will be paid to the selection of regional consultants to the extent possible. The evaluation team will consist of no more than 3 people. The same team will visit all of the countries participating in the project in order to produce a coherent evaluation. The results of the mid-term evaluation will be made publicly available according to the GEF's principles of transparency and free access.

#### ***Clearing House Mechanism***

The National Coordinator will work with the project's national partners to establish biodiversity indicators and monitoring indicators during the first year of the project. These indicators will be submitted to the Regional Facilitator for his assent as to the type of biodiversity to be monitored, the frequency of the measurements and the periodicity of the reports to be submitted to him. This information will be shared with the focal point of the "Clearing House Mechanism", GEF / UNDP as well as the other project partners.

The monitoring information will be reviewed and summarized by the Project Manager and submitted to the Regional Facilitator for further analysis and review.

#### ***GEF Project Implementation Review***

The project will also be subject to the GEF Project Implementation Review (PIR) process. This involves filling out a computerized questionnaire (to be submitted each year in July/August). In view of the fact that this regional project will be treated as a single entity, each national component, through its National Coordinator, will submit the information required by the Regional Facilitator in a timely manner so that the GEF PIR process may be completed on time.

#### ***UNDP monitoring of GEF-funded project activities***

Ad hoc monitoring missions may be undertaken, in coordination with the Regional Facilitator, FFEM, Tour du Valat/Conservatoire du Littoral, by the UNDP/GEF group of New York in all countries concerned by the activities funded by UNDP/GEF (Albania, Egypt, Lebanon, Morocco, Palestinian Authority and Tunisia). The UNDP Country Offices in these countries/Authority will be responsible for day-to-day monitoring and dialogue with the national authorities during the implementation of the project.

#### ***Regional Advisory Committee annual meetings***

The purpose of the annual meetings of the Regional Advisory Committee is to provide a forum for dialogue contributing to a project global strategic vision, and for exchanges of ideas between the participants in order to

transfer good practices and the lessons learned within each of the Mediterranean countries. The Regional Advisory Committee may issue recommendations in line with project objectives. UNOPS and UNDP/GEF will implement them taking into consideration the existing conditions, the GEF eligibility criteria and the budget constraints.

The composition of the Regional Advisory Committee will include:

- One representative of each of the Ministries or entities in charge of the environment in each country/Authority (if possible the Chief or Assistant Chief of the delegation to the MAP meeting)
- The National Project Coordinator;
- GEF/UNDP,
- UNOPS
- FFEM/AFD,
- French Environment Ministry;
- The Coordinator of the Mediterranean Action Plan or his representative;
- The Secretary General of the Ramsar Convention or his representative.
- Tour du Valat
- Conservatoire du Littoral

The *Regional Advisory Committee* may invite the participation, at their own expense, of other partners or qualified authorities: European Union, IUCN, WWF or any other person whose presence might be considered appropriate.

The expenses incurred by the members of the *Regional Advisory Committee* for their participation in the Committee's annual meeting are charged to their respective national budgets.

#### ***Financial Reporting***

The Government will provide UNDP with certified periodic financial statements relating to the status of UNDP/GEF funds, including an annual audit of these financial statements, according to the procedures set out in Section 30503 of the UNDP Policies and Procedures Manual (PPM) and Section 10404 of the UNDP Finance Manual, and any revision of these Manuals. The audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

The Government will provide UNDP with certified periodic financial statements relating to the status of UNDP/GEF funds, including an annual audit of these financial statements, according to the procedures set out in Section 30503 of the UNDP Policies and Procedures Manual (PPM) and Section 10404 of the UNDP Finance Manual, and any revision of these Manuals. The audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

## **I. LEGAL CONTEXT**

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Egypt and the United Nations Development Programme, signed by the parties on 19 January 1987. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government co-operating agency described in that Agreement.

## **J. Budget**

**J. BUDGET**

				M/M	TOTAL	m/m	Year 1	m/m	Year 2	m/m	Year 3	m/m	Year 4	m/m	Year 5
<b>10</b>	<b>Project Personnel</b>														
	11.01 International Experts			20	320000	8	128000	3	48000	3	48000	3	48000	3	48000
	11.02 Short Term Consultants			13	184600	3	42600	2.5	35500	2.5	35500	2.5	35500	2.5	35500
	<b>11.99 Subtotal</b>			<b>33</b>	<b>504600</b>	<b>11</b>	<b>170600</b>	<b>5.5</b>	<b>83500</b>	<b>5.5</b>	<b>83500</b>	<b>5.5</b>	<b>83500</b>	<b>5.5</b>	<b>83500</b>
<b>13</b>	<b>Administrative support</b>														
	13.01 Full Time Admin Assistant			60	48000	12	9600	12	9600	12	9600	12	9600	12	9600
	13.02 Driver/ Messenger			60	18000	12	3600	12	3600	12	3600	12	3600	12	3600
	<b>13.99 Subtotal</b>			<b>120</b>	<b>66000</b>	<b>24</b>	<b>13200</b>	<b>24</b>	<b>13200</b>	<b>24</b>	<b>13200</b>	<b>24</b>	<b>13200</b>	<b>24</b>	<b>13200</b>
<b>15</b>	<b>Travel</b>														
	15.01 Local Duty Travel				15000		3000		3000		3000		3000		3000
	<b>15.99 Subtotal</b>				<b>15000</b>		<b>3000</b>		<b>3000</b>		<b>3000</b>		<b>3000</b>		<b>3000</b>
<b>16</b>	<b>Mission Costs</b>														
	16.01 Mission Costs				20000		4000		4000		4000		4000		4000
	16.02 Evaluations			2	30000		0	1	15000		0		0	1	15000
	<b>16.99 Subtotal</b>			<b>2</b>	<b>50000</b>		<b>4000</b>	<b>1</b>	<b>19000</b>		<b>4000</b>		<b>4000</b>	<b>1</b>	<b>19000</b>
<b>17</b>	<b>National Professionals</b>														
	17.01 National Project Director			60	150000	12	30000	12	30000	12	30000	12	30000	12	30000
	17.02 GIS Specialist			24	36000	6	9000	6	9000	6	9000	3	4500	3	4500
	17.03 Short Term Advisors (see Section E.1.2)			204	246000	40.8	49200	40.8	49200	40.8	49200	40.8	49200	40.8	49200
	17.04 National Consultants (see Section E.1.3)			65	157500	20	48460	20	48460	10	24230	10	24230	5	12120
	<b>17.99 Subtotal</b>			<b>353</b>	<b>589500</b>	<b>78.8</b>	<b>136660</b>	<b>78.8</b>	<b>136660</b>	<b>68.8</b>	<b>112430</b>	<b>65.8</b>	<b>107930</b>	<b>60.8</b>	<b>95820</b>
<b>20</b>	<b>Subcontracts</b>														
	21.01 NGO – awareness				75000		15000		15000		15000		15000		15000
	21.02 Policy assessment / Wetland Strategy				40000		12000		8000		8000		8000		4000
	21.03 Water analyses				30000		10000		10000		10000		0		0

	21.04 Ecotourism, Fisheries and Rangement Demonstration				70000		0		0		35000		20000		15000
	21.05 Supporting Livelihoods				110000		22000		22000		22000		22000		22000
	<b>21.06 Management Operations</b>				450000		90000		90000		90000		90000		90000
	<b>21.99 Subtotal</b>				<b>775000</b>		<b>149000</b>		<b>145000</b>		<b>180000</b>		<b>155000</b>		<b>146000</b>
				<b>M/M</b>	<b>TOTAL</b>	<b>m/m</b>	<b>Year 1</b>	<b>m/m</b>	<b>Year 2</b>	<b>m/m</b>	<b>Year 3</b>	<b>m/m</b>	<b>Year 4</b>	<b>m/m</b>	<b>Year 5</b>
<b>30</b>	<b>Training</b> (See Annex III for Details)														
	32 Group training														
	32.01 Participation in Regional Seminars				35000		7000		7000		7000		7000		7000
	32.02 National Seminar/ workshops				65000		20000		10000		10000		10000		15000
	32.03 Study tour				15000		0		15000		0		0		0
	<b>32.99 Subtotal</b>				<b>115000</b>		<b>27000</b>		<b>32000</b>		<b>17000</b>		<b>17000</b>		<b>22000</b>
	33.Local In-service training				200000		40000		40000		40000		40000		40000
	<b>33.99 Subtotal</b>				<b>200000</b>		<b>40000</b>		<b>40000</b>		<b>40000</b>		<b>40000</b>		<b>40000</b>
<b>40</b>	<b>Equipment</b>														
	45.01 Office Support Facilities (Computers, photocopiers, software..)				102500		30000		30000		15000		15000		12500
	45.02 Vehicles				96000		36000		40000		20000		0		0
	45.03 Vehicle Maintenance & Insurance				60900		12180		12180		12180		12180		12180
	45.04 Monitoring equipment				27000		10000		10000		7000		0		0
	45.05 Env. Education equipment				30000		6000		6000		6000		6000		6000
	45.06 Aerial & Satellite Photos				10000		2000		2000		2000		2000		2000
	45.07 2 Zodia base c and outboard				10000		1000		4000		4000		1000		0
	<b>45.99 Subtotal</b>				<b>336400</b>		<b>97180</b>		<b>104180</b>		<b>66180</b>		<b>36180</b>		<b>32680</b>



<b>50</b>	<b>Miscellaneous</b>																
	51 Operation and maintenance																
	51.01 Communications				54000		10800		10800		10800		10800		10800		
	52.01 Reporting cost				10000		2000		2000		2000		2000		2000		
	52.02 Publications/Printed Materials/Audio-visual materials				68000		14000		14000		14000		14000		14000		
	53 Sundries														0		
	53.01 Contingency				16500		3300		3300		3300		3300		3300		
	54.01 Project Support Services				84000		16800		16800		16800		16800		16800		
	<b>59.99 Subtotal</b>				<b>232500</b>		<b>46900</b>		<b>46900</b>		<b>46900</b>		<b>46900</b>		<b>44900</b>		
	<b>TOTAL</b>				<b>508</b>		<b>2884000</b>	<b>113.8</b>	<b>687540</b>	<b>108.3</b>	<b>623440</b>	<b>98.3</b>	<b>566210</b>	<b>95.3</b>	<b>506710</b>	<b>90.3</b>	<b>500100</b>

K. ANNEXES

Annex I. Work Plan

Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region																							
EGY/97/G33/A/1G/99																							
N°	Objectives	Outputs	Activities	Year 1				Year 2				Year 3				Year 4				Year 5			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.	Objective 1	<b>Output 1.1</b>	<i>Establishment of a national wetland strategy</i>																				
2.			1.1.1/ Conduct an LFA workshop	■																			
3.			1.1.2/ Establish a National Advisory committee subgroup	■																			
4.			1.1.3/ Collect and evaluate existing studies		■	■	■																
5.			1.1.4/ Undertake necessary multisectoral case studies					■	■	■	■												
6.			1.1.5/ Make proposals to resolve conflicting policy positions									■	■	■									
7.			1.1.6/ Mediatise the findings														■	■					
8.																							
9.		<b>Output 1.2</b>	Establish a wetland data-base using MedWet methodology																				
10.			1.2.1/ Training course on use of data-base			■	■																
11.			1.2.2/ Maintenance and updating of data-base					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
12.																							
13.		<b>Output 1.3</b>	<i>Monitoring of land-use changes using GIS</i>																				
14.			1.3.1/ Acquire and analyse satellite images		■	■	■	■	■	■	■												
15.			1.3.2/ design GIS outputs							■	■	■	■										
16.			1.3.3/Maintain data and diffuse information											■	■	■	■	■	■	■	■	■	■
17.																							
18.	Objective 2	<b>Output 2.1</b>	<i>Preliminary site diagnosis for Burullus</i>																				
19.			2.1.1/ Draw up reference map	■	■	■																	
20.			2.1.2/ Define the catchment basin			■	■																
21.			2.1.3/ Assess the water quality of inflowing waters					■	■	■	■												

22.		2.1.4/ Assess the water quality and vegetation in lagoon																		
23.		2.1.5/ Review/update existing literature																		
24.		2.1.6/ Describe principal vegetation types																		
25.		2.1.7/ Describe the mammals, fish, birds etc																		
26.		2.1.8/ Describe distribution of globally threatened species																		
27.		2.1.9 Map the land ownership in the area																		
28.		2.1.10/ Undertake a PRA of socio-economic activities in the area																		
29.																				
30.		<b>Output 2.2</b>	<i>Preliminary site diagnosis for Zaranik and Burullus</i>																	
31.		2.2.1/ Map principal vegetation types																		
32.		2.2.2/ Describe mammals, birds etc																		
33.		2.2.3/ Undertake a PRA																		
34.		2.2.4 Assess water quality at Bardawil																		
35.		2.2.5 Inventory land-use and ownership																		
36.																				
37.		<b>Output 2.3</b>	<i>Establish a site management process</i>																	
38.		2.3.1/ Conduct site-specific interdisciplinary case studies																		
39.		2.3.2/ Identification of infrastructure requirements																		
40.		2.3.3/ Designation of a consultative committee per site																		
41.		2.3.4 /Enforcement of laws to address identified threats																		
42.		2.3.5/ Hold LFA workshop on each site																		
43.		2.3.6/ Assess and address threats to each site																		
44.		2.3.7/ Recruitment of rangers																		
45.		2.3.8/ Establish agreed urban strategy																		
46.																				
47.		<b>Output 2.4</b>	<i>Implement proposals for local economic development</i>																	
48.		2.4.1/ Assess impact of grazing																		
49.		2.4.2/ Evaluate fisheries																		

Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region

EGY/97/G33/A/IG/99

N°	Objectives	Outputs	Activities	Year 1				Year 2				Year 3				Year 4				Year 5			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
50.																							
51.			2.4.3/ Assess ecotourism potential																				
52.																							
53.		<b>Output 2.5</b>	<i>Implement protected area infrastructure.</i>																				
54.			2.5.1/ Construction of centres at Burullus and Matrouh																				
55.			2.5.2/ Equipping of centres																				
56.																							
57.		<b>Output 2.6</b>	<i>Public awareness activities</i>																				
58.			2.6.1/ Establish views of local people																				
59.			2.6.2/ Produce information materials																				
60.			2.6.3/ Organise thematic field camps																				
61.																							
62.		<b>Output 2.7</b>	<i>Establishment of a monitoring system</i>																				
63.			2.7.1/Monitor water quality and submerged macrophytes																				
64.			2.7.2/ Monitor globally threatened species																				
65.																							
66.		<b>Output 2.8</b>	<i>Establish a finalised, budgeted management plan</i>																				
67.			2.8.1/Produce medium term plan																				
68.																							

Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region

EGY/97/G33/A/1G/99

N°	Objectives	Outputs	Activities	Year 1				Year 2				Year 3				Year 4				Year 5			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
69.	Objective 3	<b>Output 3.1</b>	<i>Training programmes and technical exchanges</i>																				
70.			3.1.1/ Definition of training needs			■																	
71.			3.1.2/ Training in natural area management methods				■																
72.			3.1.3/ Training in establishment of monitoring procedures				■																
73.			3.1.4/ Implementation of training activities					■	■	■	■	■	■	■	■	■	■	■	■				
74.			3.1.5/ Participation in five regional seminars	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
75.			3.1.6/ Organisation of one regional seminar for all other participating countries	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
76.			3.1.7/ Placement exchange with other protected areas	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
77.			3.1.8/ Regional web site initiative	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
78.			3.1.9 Provision of information to biodiversity clearing house	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
79.			3.1.10 Participation in regional advisory committee meetings (one per yr)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

\* Precise timing of activities 3.1.5 – 3.1.10 to be determined through regional consultation.

**Annex II. Schedule of Project Reviews, Reporting and Evaluation**

Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region EGY/97/G33/A/1G/99																					
	Activities	Year 1				Year 2				Year 3				Year 4				Year 5			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Inception report		2/																		
2	APR			6/																	
3	TPR				9/																
4	APR							6/													
5	TPR								9/												
6	APR											6/									
7	Mid-term evaluation												9/								
8	APR															6/					
9	TPR																9/				
10	APR Terminal report																			6/	
11	Terminal tripartite review meeting																				9/

### **Annex III. Training Programme**

Training is an essential component of this project as its success or failure hinges on the ability of the site managers to address the threats to the different sites in a sustainable manner. This will, in many cases, require personnel to acquire new skills and especially to develop the habit of intersectoral collaboration and decision-making in their daily activities. The programme has components aimed at training of trainers, but will also directly train national staff through an appropriate training focal point. The training programme does not aim to train large numbers of people in generalities, but rather to assist either specialists to adapt their knowledge to new situations, or to give generalists some specific understanding of how to manage coastal and wetland sites. Cross-cultural (inter-disciplinary) training will be emphasized as an aid to multi-sectoral planning.

The training component of the programme has four main aims :

1. Support to the development of a training focal point for protected areas management in each country.
2. Training as a means to acquire knowledge and methodologies appropriate to intersectoral management planning for coastal and wetland areas.
2. Training as a tool within the site management process (i.e as an opportunity to put stakeholders around a table and to promote exchanges on a topic of common concern as a way to remove obstacles in the management process "creating a common culture").
4. Promote the capacity of a national institution to provide training sessions for wetland and coastal conservation

For the training programme to be effective, it requires to be clearly focussed on needs at local level. These needs can be expected to evolve during the project cycle, and the intervention of the training activities must therefore be developed and applied on an annual basis. For example, when the site management committees are convened, a training session may be organised in order to create a "common culture", and to help the local dynamics of management plan preparation and implementation. The precise needs of the members of that committee can only clearly be identified once it is established.

The training programme will emphasise a hands-on practical problem-solving style, with "general knowledge" issues kept to a minimum. This means that it will also be strictly targeted at those who will use their improved skills in their daily work. Selection of the profile of trainees will therefore be decided in consultation with the regional training team to ensure maximum effectiveness.

The regional team will provide the design, content and material for the local training courses, while all the local costs will be covered by the national budget. To facilitate the implementation of the courses and improve capacity-building at national level, a training focal point will be designated by the National Project Director. This focal point will be responsible for mobilising national experts to deal with different themes, when such expertise is available locally, and for ensuring the smooth local logistics of the training operation.

In addition to the local courses, six regional courses will be held on the following themes :

1. Designing a national wetland strategy
2. Coastal zone planning tools
3. Integrated management planning
4. EIA techniques for Mediterranean wetlands
5. Design of public awareness programmes
6. Organising applied research on biodiversity conservation

These courses will be geared towards information, knowledge and understanding existing tools and methods, and will improve the participants' awareness of similar activities ongoing at a regional level. Information materials and documentation will be distributed at these meetings. Countries other than the beneficiaries may also participate with the agreement of the regional facilitator if they cover costs, in order to promote the regional nature of the action.

The content and design of the courses will be defined by the regional team, who will establish the nature of the key target beneficiaries, define training needs and select candidates with the required profile in consultation with the National Project Director.

One course will be held in each participating country/Authority at or near a project site and will hence allow project participants to familiarize themselves with other sites in the network.



**Annex IV. Equipment Requirements**

<b>INPUTS</b>		<b>GEF \$\$</b>	<b>National</b>
			<b>Contribution</b>
			<b>LE</b>
<b>Central level</b>	Aerial Photos	5000	
	Satellite Images	5000	
	3 Computers + software ( <i>including for Wetland Unit</i> )	7000	
<b>Zaranik</b>	Office Support Facilities	5000	
	4X4 vehicle	28000	90000
	2 off-road motor bicycles		80000
	Management operations	110000	550000
	Communications	18000	5000
	Misc. eqpt. (monitoring)	7000	
	Computer and software	3500	
<b>Burullus</b>	Construction		1500000
	Office Support Facilities	40000	
	4X4 vehicle	28000	90000
	Management operations	130000	500000
	Communications	18000	5000
	Computer + software	3500	
	2 Zodiac + outboard	10000	
	Monitoring equipment	10000	
<b>Matruh Sector</b>	Construction		1500000
	Office Support Facilities	35000	
	2 4X4 vehicles	28000	90000
	4 off-road motor bicycles		160000
	Management operations	210000	500000
	Communications	18000	5000
	2 Computer + software	3500	
	Monitoring Equipment	10000	
	<b>Total</b>	<b>732,500</b>	<b>5,075,000</b> <b>(=US\$ 1,495,726.5)</b>

The equipment provided remains the property of UNDP for the duration of the project. Its upkeep and maintenance is the responsibility of the organization to which it is attributed unless otherwise specified. After the end of the project the equipment will belong to the national organization which is the beneficiary of the equipment.

## **Annex V. Job Descriptions**

### **Terms of Reference - Project Director**

The Project Director is the key focal point for the project at national level and his/her tasks are as follows:

- ▷ Ensure timely implementation of the different project activities
- ▷ Supervise and coordinate the issuing of subcontracts for each of the project activities in close consultation with UNDP.
- ▷ Circulate information concerning the project, its activities, and the wider activities of other Ministries specifically concerning project sites
- ▷ Assist and advise the local NGOs in the implementation of their activities under the project.
- ▷ Write all the necessary reports required within the UNDP project cycle and any others, as requested.
- ▷ Maintain regular contact with the project Regional Facilitator and draw on the regional network for advice and information which would improve project implementation at the project sites.
- ▷ Participate in the planned regional seminars, and organise one such seminar in Zaranik for the other regional participants.

### **Qualifications**

- ▷ A University higher degree (Masters or PhD) in Environmental science, Agriculture or Forestry.
- ▷ Experience of project management, preferably in an environmental field.
- ▷ Experience of working with NGOs
- ▷ Familiarity with the Mediterranean Coastal area, its people and its politics is essential
- ▷ Ability to communicate and work effectively with a wide range of project partners.
- ▷ Capacity to write reports and manage budgets
- ▷ Fluent in Arabic and English, French an advantage.

The post is based in Cairo and reports to the Director of the Nature Conservation sector

### **Terms of Reference - Legal Experts**

The Legal expert(s) will work in close collaboration with EEAA and undertake the following activities :

1. Review and analyse existing legislation (property rights, nature protection, water and wetlands, urban planning, coastal planning, tourism, waste disposal ...) and identify the components of this legislation which may be immediately applied for the protection of sensitive natural areas.
2. Draft legal text providing the basis for the legal protection of the biodiversity at Burullus, Bardawil and Matrouh including the delimitation and zoning determined as a result of the biodiversity and socio-economic field studies, and making appropriate provision for an intersectoral management authority for the area.
3. Propose measures for addressing the gaps in the existing legal framework linking long term biodiversity protection to sustainable development in sites of central or regional importance for biodiversity.
4. Define legal procedures allowing the acquisition of private lands by the EEAA for the specific purpose of protecting its coastal biodiversity in the long term through appropriate land-use policies.

It is essential that the process draws on experience elsewhere in the Mediterranean region, and funds are available for the necessary study tours. Contact may also be made with the IUCN environmental Law Centre in Bonn, and the Conservatoire du Littoral in France, via the Regional Facilitator.

### **Terms of Reference - Site Diagnosis**

The site diagnosis is an important stage in the development of a management plan for a natural area.

There are four principal objectives :

1. Determine the distribution of threatened species, where possible their number, and hence identify the important areas for each species or group of species
2. Identify and measure the specific threats to each of the species and their habitats (eg. overgrazing, hunting, etc)
3. Define and implement a monitoring system for the monitoring of key parameters which have an impact on the species' habitat or the species themselves.
4. Constitute a small biodiversity working group which can advise the managers of the site in their specialist field.

It is important that each group specialist (plants, birds, reptiles etc) should create links with the international NGOs and universities working on similar topics. Knowledge of biodiversity is a direct function of the time spent in the field. Every effort should therefore be made to mobilise students from local universities to assist with this work. It may also be possible to encourage visits from international naturalists, on a volunteer basis, which will help constitute the necessary information base.

Regional facilitator	<p>Provide a model baseline document for all countries This will be presented at the first meeting of the biodiversity working group</p>
Biodiversity coordinator	<p>Coordinate the field activities of the team Organise the digitised map at an appropriate scale compiles the final report, incorporating all the group accounts Make proposals for zoning of the sites and the limit of the conservation areas, based on biodiversity distribution Provide the linkage between the biodiversity working group and EEAA and with the management committee</p>
Botanist(s)	<p>Establish the distribution of threatened flora Make a map of the principal vegetation communities Define and implement a monitoring system for threatened flora Identify the factors (positive and negative)influencing the distributions of the threatened species</p>
Reptile and amphibian expert (s)	<p>Establish the distribution of reptiles and amphibians with particular attention to those that are globally threatened Define and implement a monitoring system for threatened reptiles and amphibians Identify the factors (positive and negative)influencing the distributions of the threatened species</p>
Ornithologist(s)	<p>Establish the distribution of breeding and migratory birds with particular attention to those that are globally threatened Define and implement a monitoring system for threatened birds Identify the factors (positive and negative) influencing the distribution of the threatened species</p>
Mammalogist	<p>Establish the distribution of mammals with particular attention to those that are globally threatened Define and implement a monitoring system for threatened mammals Identify the factors (positive and negative)influencing the distributions of the threatened species</p>

### **Terms of Reference – GIS Specialist**

The GIS Specialist will be based at the central level, with frequent visits to the three project sites. He/ she will be responsible for:

#### Duties:

- ▷ Acquiring and analysing aerial and satellite images
- ▷ Establishment and operation of central GIS data-base
- ▷ Draw up a clear reference base map for each of the project sites
- ▷ Monitoring of land use changes using GIS system
- ▷ Maintain and diffuse gathered data and information
- ▷ Coordinate with site diagnosis teams, technical and information specialists and other parties concerned

#### Qualifications:

- ▷ A University higher degree in Environmental Sciences or other relevant academic field
- ▷ More than 5 years experience in working with GIS systems in the field of Environment
- ▷ Experience in writing technical reports
- ▷ Fluency in English

### **Terms of Reference – Technical Adviser**

The technical adviser will be available on a part-time basis at the site level for each of the three project sites and will provide assistance and guidance with the following:

- ▷ Collection and evaluation of existing site-specific studies
- ▷ Coordination of field monitoring activities for preliminary site diagnosis
- ▷ Coordination of the establishment of a site monitoring system
- ▷ Assist in planning and implementing training programmes and technical exchanges

### **Terms of Reference – Information Adviser**

The Information Adviser will be available on a part-time basis at the site level and will be responsible to:

- ▷ Provide site specific data and information for the wetland data base
- ▷ Provide information to biodiversity clearing house
- ▷ Produce site specific information materials and publications
- ▷ Coordinate site level efforts in participating in regional web initiative
- ▷ Liaise with stakeholders on the site level for constant exchange of information concerning project implementation
- ▷ Coordinate with other protected areas both nationally and regionally for information exchange

### **Terms of Reference – Community Adviser**

The Community Adviser will be available on a part-time basis at the site level and will be assist with:

- ▷ Maintaining close contact and dialogue with local communities to create a "common culture"
- ▷ Establishment of local views on various conservation issues
- ▷ Coordination of PRA in the area
- ▷ Planning and implementation of site specific public awareness activities

- ▷ Coordination of training programmes at the local level
- ▷ Organization of thematic field camps for children and university students to site

### **Terms of Reference - Ranger**

#### Duties

- ▷ Conservation of all the natural resources of the project sites through daily visits in the field.
- ▷ Protection of fauna and flora from illegal activities.
- ▷ Participation in organising and executing rehabilitation schemes
- ▷ Participation in public awareness activities with NGOs

#### Qualifications

- ▷ A University degree, or forestry diploma, preferably in an environmental area
- ▷ Calm personality with rigorous standards
- ▷ Resident of the immediate area

### **Terms of Reference - PRA study**

The PRA is a well known and fairly standard process. the most important element here is that special emphasis be put on the relationships between local people and the natural environment of the project sites as a resource for example for grazing, wood supply, medicinal plants water, etc, rather than a full review of development needs in for example, agriculture, as is often the case. The PRA should also look at the attitudes of local people to the project sites.

It is essential not to raise expectations that all the issues raised will be addressed by the project.

The report will be published in English.

### **Terms of Reference - Medicinal plants**

- ▷ Review, through meetings with local people, the use of natural plants from the project sites for medicinal, or other, purposes.
- ▷ Examine whether the available plants can satisfy the demand, and the extent of their commercialisation.
- ▷ Assess the negative and positive factors affecting these plant species, and indicate their approximate distribution within the ecosystem.

The report will be published in English.

### **Terms of reference – Lagoon management specialists**

Lagoon management involves a complex combination of factors including fresh water inflows, connections with the sea and trophic status. Before management measures can be recommended and undertaken, it is essential to have a good diagnosis of these factors which provide the basis for future monitoring of the site, and for management actions.

The lagoon management team will include experts in lagoon vegetation dynamics (especially submerged macrophytes), specialists in water quality evaluation, and water – sediment interactions for key nutrient cycles. They will undertake the following tasks.

- Mapping of aquatic macrophytes
- Assessment of nutrient status in the water column and in the sediments.

- Assess the current trend of the lagoon ecosystem (is the lagoon becoming more saline, more eutrophic, more polluted ...)
- Determine the factors negatively and positively affecting the presence of globally threatened species (in association with local biodiversity specialists)
- Propose measures to reduce the negative impacts.
- Propose a monitoring programme of key parameters which will guide the future decisions of the lagoon management bodies.

The international experts will work in association with local university specialists and the report will be published in English.

### **Pre-qualification criteria for Environmental and Public Awareness**

The local institutions shall be subject to the following pre-qualification criteria to become eligible for participation in this project.

- Have strong, grassroots connections with local communities around project sites.
- Have elements of an organizational mission and/or vision that is participative and which addresses environmental protection
- Have extensive experience in organizing local campaigns for public awareness or clean-up activities
- Have an immaculate record with respect to transparency, substantive and financial and accountability when working under subcontract.

Institutions may form partnerships in order to satisfy these criteria.

These pre-qualification criteria shall be published in newspapers in Arabic during the pre-qualification process.

### **Consultative Committee (Activity 2.3.3)**

The mandate of the Committee is «to advise the EEAA on the sustainable development of project sites (Bardawil/Burullus/Matrouh ...) and the conservation of their biodiversity».

Its terms of reference may include some or all of the following ::

- Review the technical reports produced by the project and accept, or reject, their recommendations.
- Create a framework for an exchange of views and the harmonization of sectoral activities planned by each of the committee members.
- Discuss the annual work plan of the project and examine linkages with other ongoing projects.
- Participate in the development of a management plan to create a framework for future management of the area
- Provide an institutional interface between the activities in the protected area and those in the surrounding coastal zone
- Ensure that the views of local people are fully taken into account in the management process
- Stimulate the search for additional funds to implement the proposals emanating from the different technical reports.
- Prepare an annual report that summarizes the activities of the committee on project sites

The committee may request qualified experts, or relevant institutions, to participate in its work. Minutes of each meeting are kept and circulated to members and to central level.

### **Policy assessment/wetland strategy**

The development of a national wetland strategy involves a complex series of inter-ministerial negotiations leading to emergence of a new policy or policies to improve wetland management activities within the country. This process is essential if the root causes of wetland loss are to be addressed.

The following tasks will be undertaken :

- Identification of government policies, legal texts and subsidies which have a negative impact on wetlands.
- Identification of above which have a positive impact on wetlands
- Propose measures to reduce the impact of the former and improve the impact of the latter.
- Launch negotiations with the concerned ministries in order to implement the proposed measures.
- Identify the appropriate institutions for implementation of the measures.