

TUNISIA
Tunisia: GEF: Gulf of Gabes Marine & Coastal Res. Prot.

GEF Project Brief

Middle East and North Africa Region
MNSRE

Date: July 8, 2003 Sector Manager/Director: Letitia A. Obeng Country Manager/Director: Theodore O. Ahlers Project ID: P069460 Focal Area: B - Biodiversity	Team Leader: Allan Rotman Sector(s): General water, sanitation and flood protection sector (50%), General agriculture, fishing and forestry sector (30%), Sub-national government administration (20%) Theme(s): Biodiversity (P), Environmental policies and institutions (S)
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Project Financing Data

Loan Credit Grant Guarantee Other:

For Loans/Credits/Others:

Amount (US\$m): GEF Grant 6.06

Financing Plan (US\$m):	Source	Local	Foreign	Total
BORROWER/RECIPIENT		2.49	0.25	2.74
GLOBAL ENVIRONMENT FACILITY		3.06	3.00	6.06
Total:		5.55	3.25	8.80

Borrower/Recipient: GOVERNMENT OF TUNISIA

Responsible agency: MINISTRY OF AGRICULTURE, ENVIRONMENT AND WATER RESOURCES

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Estimated Disbursements (Bank FY/US\$m):

FY									
Annual									
Cumulative									

Project implementation period: 5

Expected effectiveness date: **Expected closing date:**

A. Project Development Objective

1. Project development objective: (see Annex 1)

The main objective of the Project is to protect biodiversity of Mediterranean-wide and international importance and promote more harmonious economic development based on the sustainable management of the marine and coastal natural resources.

The specific objectives of the Project are:

- a) to develop mechanisms for the integrated biodiversity management of the Gulf of Gabès at six (6) pilot sites and implement them on three (3) priority pilot sites; and,
- b) to identify the long-term institutional and technical resources required to reverse the current trend of biodiversity degradation through involvement of the communities concerned within a framework of promoting sustainable participatory development.

2. Key performance indicators: (see Annex 1)

As stated in the Project Summary presented in Annex 1, the key Project performance indicators fall into three main categories of indicators. The key indicators are summarized as follows:

- **Technical and biological indicators** are based on results of applied monitoring and operating management plans for the pilot areas: The indicators are: variation of the density and distribution of key habitats (e.g. annual surveys of sea grasses or keystone species in the Project management areas); change in trends in alien species (e.g. annual surveys) (Note 1); establishment of new routine biodiversity and water quality monitoring programs; variation of water quality (e.g. regular monitoring);
- **Institutional indicators** with the aim of assessing the implementation level and efficiency of capacity building for the existing institutional framework. The main indicators are: protected area management effectiveness tool at the beginning, mid-term and end of the Project (Note 2); number of training sessions carried out and number of attendees; progress towards preparation of 6 management plans and towards implementation of 3 management plans; total area of biodiversity habitat under special management measures; numbers of staff trained for biodiversity management at the local level; and increases in local institutional budget allocations.
- **Socio-economic indicators** relating to the target and beneficiary populations which will be used to evaluate the actual advantages brought about through the improved management of the natural marine and coastal natural resources. The indicators are: number of awareness campaigns and of local stakeholders participating in project activities; number of active fishermen and revenues generated by fishing communities; number of jobs and revenues generated in the eco-tourist sector; number of visitors to the managed sites under implementation (i.e. Gulf of Bou Ghrara, Kneiss Islands, sea grass area).

Note 1: The term "alien species" used in this report covers all animal and plant species that do not originate in the Gulf region and whose introduction into the area is the result of deliberate or unintentional actions: natural passage through the Suez Canal (Lessepsian migration), species transported by ballast water or clinging to ship hulls, species imported for fish-farming or aquariums, etc. These species are sometimes also described in the literature as "introduced", "exotic species" or "invasive species").

Note 2 : The methodology to be used is based on the following document: "Reporting Progress at Protected Area Sites", Prepared for the World Bank/World Wildlife Fund Forest Alliance, March 2003.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1)

Document number: R 2000-46 Date of latest CAS discussion: 4/27/2000

The present Project directly supports the objective of the Country Assistance Strategy for Tunisia, which is to reinforce the long-term development of environmental and natural resources management. Numerous funding agencies are interested in Tunisia in the environmental and natural resources sector and are working to support and complement the measures taken by the Tunisian government, which has placed this sector as a priority.

In the framework of a nation-wide action in this sector, the Tunisian authorities have naturally placed priority on the coastal zone, where almost 80% of the Tunisian population is concentrated. Ambitious action plans have been undertaken in the fields of pollution control, coastal urban development, protection of fish resources, and tourist development, all with the ultimate aim of economic and social development and protection of natural resources and the environment. In all these action plans, the Gulf of Gabès region is named as a priority coastal zone.

1a. Global Operational strategy/Program objective addressed by the project:

This Project forms part of the GEF's Operational Strategy for preserving biodiversity, and more specifically the **GEF Operational Program No. 2 concerning coastal, marine and freshwater ecosystems**. It is also relevant to OP 8.

The main lines of this Program correspond to three series of directives given by the Conference of Parties (COP) at the Convention on Biological Diversity (CBD) to the GEF in its capacity as institutional body temporarily responsible for the financial mechanism. At its first meeting, COP 1 set the priorities for the programs, which include:

- projects which encourage the conservation and sustainable use of the biological diversity of threatened coastal and marine resources, and
- projects which encourage the conservation of biological diversity and sustainable use of their resources in other ecologically vulnerable areas.

The COP also gave the GEF recommendations on the conservation and sustainable use of marine and coastal biological diversity, notably encouraging "*the integrated management of marine and coastal areas, because this type of management provides the most suitable framework for tackling the problem of the effects of human activities on marine and coastal biological diversity and to encourage the conservation and sustainable use of this diversity*". The Gabès Project fits in seamlessly with the spirit of these strategic guidelines.

The Gulf of Gabes is identified as a regional priority in the Global Representative System of Marine Protected Areas (World Bank, 1995) because of its extensive meadows *Posidonia* (sea grass) and associated biodiversity. The *Posidonia* meadows in the Gulf of Gabes are considered to be the most extensive in the Mediterranean. It is also identified in the WWF Gap Analysis (2001) as one of thirteen priority areas for biodiversity protection in the Mediterranean.

The main objective of the GEF Operational Program No. 2 is "*The conservation and sustainable use of the biological resources in coastal, marine and freshwater ecosystems in general*".

- To preserve the biological resources, conservation areas will be set up and strengthened, focusing on coastal, marine and freshwater ecosystems in tropical and temperate zones which are under threat, and

- to ensure the sustainable use of resources, the objectives of conservation of biological diversity, production, and socio-economic development will be combined.

The main basic assumptions underlying these objectives are as follows:

- Scope: achievement of the objectives of the conservation and sustainable use of biological diversity in the various ecosystems declared to be priorities in the framework of national strategic programs and plans, and
- Replicability: Replicating successful actions in other areas, taking account of the experience gained and the lessons learnt. This notion of replicability is important, and means that some actions will be carried out in the form of "pilot actions".

This Project, presented to the GEF for the protection of the natural marine and coastal resources of the Gulf of Gabès, meets all the objectives of this GEF Operational Program No. 2 and its basic hypotheses.

Tunisia has also ratified the main international conventions and treaties concerning the protection of habitats and species: CITES (1974), UNESCO World Heritage (1974), Ramsar Convention (1979), Desertification Convention (1979), Bonn Convention (1986), Convention on Biological Diversity (1993), Bern Convention (1995).

Emerging priorities for GEF

The Project is consistent both with pillar 1 (protected areas) and pillar 2 (mainstreaming biodiversity in the production landscape). The six pilot sites will build capacity and provide valuable lessons for marine Protected Area (PA) management, thereby contributing to the sustainability of the PA network. The Project will also provide useful models and monitoring tools for integrating biodiversity issues into mainstream development, especially into decisions on coastal zone development and the tourism sector.

The collection, analysis and evaluation of baseline data on key species, including invasive alien species (IAS), will feed into decisions related to management of the coastal zone. Monitoring of IAS will provide valuable information on pathways and potential control mechanisms, important for the whole Mediterranean basin.

2. Main sector issues and Government strategy:

In order to describe the major sector issues and Government strategy, a Project area has been defined as described below:

Project Area:

The Project area is defined based on five criteria as follows:

- (i) Goveronate Boundaries - the Project area includes the entire Goveronates of Sfax, Gabes and Médenine;
- (ii) Districts (*Delegations*) - the Project area includes all districts that are adjacent to marine areas, from Mahdia in the north to Ben Guadane (at the border with Libya) in the south; almost all these districts are covered by formal land use plans;
- (iii) Coastal Ecosystems - all littoral formations (e.g. sabhkas, beaches, lagoons, dunes, wetlands, etc.) and coastal ecosystems (e.g. oasis, oueds, particular vegetation communities, etc.);
- (iv) Public Marine Lands (*Domaine public maritime -DPM*) - this zone is generally defined as 100 meters from the high water mark, and in ecologically sensitive areas this zone extends farther inland; this is a legally defined zone that is mapped in detail on topographic maps for all of Tunisia;
- (v) Marine Limits - the Project area is delimited in the north by the Kerkennah Islands, in the south by the border with Libya, and in the east by the isobath minus -50 meters (also called depth of 50

meters); this depth is located about 100 km from the town of Gabes, and 60 km from the towns of Sfax and Zarzis; this depth is chosen because it is the practical limit of littoral influences, because the vast majority of documents are only available up to depths of 40 meters and because the major characteristic biodiversity formation of sea grass (*Posidonia oceanica*) does not exist below 40 meters.

Background to biodiversity sector issues: The marine environment

The seagrass meadows of *Posidonia oceanica* is the most characteristic and most important marine ecosystem in the Mediterranean but endangered by human impacts. Sea grass beds play a critical role in maintaining water quality, and act as critical habitats for the lifecycle of almost all commercial fish and crustacean species, as well as marine flag species such as turtles. There is a direct link between the presence of sea grass beds and sustainable fish production.

The *Posidonia* meadows in the Gulf of Gabes are considered as the most extensive on the Mediterranean region. Most of the benthic communities living in the Mediterranean are represented in the Gulf of Gabès, in some cases with a number of specific features. Some of these communities are exceptionally valuable in terms of biodiversity, for either Tunisia or the Mediterranean as a whole. Given the tidal range in the Gulf of Gabès, which is unique in the Mediterranean (with the exception of the northern Adriatic, between Venice and Trieste), the vertical amplitude of the mediolittoral zone is exceptional, with particular biological characteristics and highly diverse fauna.

The infra-littoral zone starts just below the average sea level and drops to the lower limit of the *Posidonia oceanica* sea grass beds, at depths between 20 and 40 m depending on the transparency of the water. This is the richest zone, from biodiversity point of view. On hard substrates, the most noteworthy infra-littoral populations in the Gulf of Gabès are *Cystoseira schiffneri* forests, known on the Kerkennah Médenine. These populations are extremely rare in the Mediterranean. On loose substrates and on beds of dead *Posidonia oceanica*, vast meadows of *Caulerpa prolifera* have been described in the Gulf of Gabès itself, beyond the *Posidonia oceanica* sea grass beds. They constitute spawning grounds and nurseries for numerous exploited species. In 1992, there were only a few remaining shallow stations where *C. prolifera* was still present, no doubt because of turbidity and siltation. The most recent observations confirm this decline.

The fish species found in the Gulf of Gabès present warm-water affinities which distinguish them from those of the Gulf of Tunis and the north coast of Tunisia. In particular, they include a number of lessepsian species (species that have come to the Mediterranean Sea from the Red Sea via the Suez Canal). Several tropical African species that are characteristic of the Senegalese coast are also found in the Gulf of Gabès.

Around the Kerkennah Islands, the *Posidonia oceanica* has a very unusual and extremely original appearance: strips several tens of metres long by one to two meters wide weave through a bed of *Cymodocea nodosa* and *Caulerpa prolifera*, between 0.5 and 3 m deep. *P. oceanica* meadows are considered to be the most important ecosystem in the Mediterranean. Along with coral-producing areas, this is the main biodiversity reservoir in the Mediterranean; nearly 20% of all the species known in the Mediterranean, i.e. several thousand species, have been spotted there. They are spawning grounds and nurseries for numerous species, including fish that are of economic interest. *Protecting the Posidonia sea grass beds is therefore essential for conserving biodiversity in the Mediterranean; it can also be justified for economic reasons (commercial fishing activities).*

A certain number of noteworthy species found in Tunisia are listed in the Annexes to the Barcelona Convention and/or the Bern Convention. A large number of species are highly valuable in terms of natural biodiversity, including sponges, molluscs (pen shells, cowries), crustaceans (large sea lobsters), diademe sea urchins, sea horses and marine turtles (loggerhead turtles, leatherback turtles and green turtles, whose survival in the Mediterranean can only be guaranteed if their breeding grounds are protected).

In the sector covered by the Project, several noteworthy zones must be taken into consideration. These

are environments which have been identified as being especially sensitive, such as the **Kerkennah Islands** and the **Kneiss Islands** nature reserve, which provide a habitat for noteworthy species or populations such as *Posidonia oceanica* sea grass beds (Jerba-Zarzis sector), *Cymodocea nodosa* sea grass beds (**Bahiret El Bibane**) and *Neogoniolithon brassica-florida* reefs (Bahiret El Bibane). The reefs consisting of *Neogoniolithon brassica-florida*, at Bahiret El Bibane, are a unique formation in the Mediterranean. They are therefore of great value in terms of natural habitat and are extremely fragile. Their destruction would be irreversible on a human timescale. Nothing is known of their fate since the last observations, which date back to 1992. Given these factors, it is essential to protect the Bahiret El Bibane, with its high biodiversity as yet barely affected by human activities. The Kerkennah Islands also contain a diverse range of unique natural habitats of regional and international significance, are very sensitive to biodiversity threats and thus also warrant special protection measures.

Background to biodiversity sector issues: The terrestrial environment

A survey carried out by ornithologists in March 2000 in southern Tunisia observed more than 140 species there, most of them near the lagoons, sebkhas and oases, all of which are important sites for Trans-Saharan migrating birds and wintering species. According to Wetlands International, nearly 7000 pink flamingos were counted in January 1999 around Jerba island, in particular towards Bou Ghrara. A census of water fowl carried out in mid-January 2000 by the Tunisian Ornithology Group revealed an ever larger population of pink flamingos in this sector, with 5215 individuals counted around Jerba and more than 20 000 in Bou Ghrara lagoon.

Of the threatened plant and animal species *Prosopis stephaniana*, a legume, has been classified as top priority for protection by the Tunisian Government. This plant, which attains its most westerly limit in Tunisia, has only a single station in the Gabès oasis and this is threatened with extinction as a result of urban pressure. The second priority are several species of low steppe plants that are over-grazed by pasturing animals which also merit special conservation measures. Certain species of bird observed around the edges of the Project area are already receiving special attention, as they are on the IUCN Red List of threatened species: the marbled duck (*Marmaronetta angustirostris*, vulnerable), the falcon (*Falco naumanni*, vulnerable), the pallid harrier (*Circus macrourus*, near threatened-soon threatened) and Audouin's gull (*Larus audouini*, less threatened as there are conservation programs in progress in other parts of the world).

Land sites in the Project area that are noteworthy for their biodiversity include: **Gabès Oasis** (the westernmost coastal oasis), **Bou Ghrara lagoon** (which hosts considerable numbers of waders and young flamingos), the **Kneiss Islands**, which are of extreme ornithological value, almost unique in the Mediterranean in terms of their tidal range; the concentration of waders, gulls and terns is among the highest in the entire Mediterranean, **Bahiret El Bibane** (which hosts a considerable diversity of birds) and the **Thyna salt flats**, a major site for cormorants (more than a thousand in March 2000), herons, egrets, spoonbills, waders (in particular more than 2000 avocets), gulls and terns (including a group of Caspian terns).

Biodiversity sector Issues : Main threats

The three main past and current direct threats causing losses of marine and coastal biodiversity in the Gulf of Gabès are 1) urban and tourist land development, 2) industrial, urban and marine boat traffic pollution and 3) over-fishing. These three major causes are indeed found systematically along the rest of the Tunisian coast and can also be observed frequently along the coasts of other Mediterranean countries.

Direct threat # 1: Urban concentration along the coast

Of the 40 districts (*delegations*) in the Project area, 23 are coastal or insular and comprise 72% of the Project area's population, which is currently estimated at 1,138,000 inhabitants. The Project area includes

about one fifth of the industrial companies in Tunisia. Tourism, now the foremost net foreign currency earning industry in Tunisia, accounts for more than 52,000 beds in the Gulf of Gabès, divided up among nearly 200 establishments, i.e. 27% of the country's over-night hotel capacity. However, these are particularly unevenly distributed in the Project area, with more than 80% being concentrated in the Jerba-Zarzis area. The development of urban, industrial and tourist infrastructure has thus exerted severe pressure on the coastal environment and its biodiversity. Gabès oasis is the best illustration of this. The Government of Tunisia has for many years been following a policy to regulate and plan the spatial development of the coast in a better way, in particular by the creation of the Agence de Protection du Littoral (APAL) and the implementation of planning tools such as the urban master plans (SDAA) for Gabès and Sfax and the development master plans for sensitive areas (SDAZS), 6 of which have been prepared so far for the coastal region of the Gulf of Gabès.

Direct threat # 2: Marine water quality pollution

The pollution caused by the region's economic development is probably one of the main historic causes of the disappearance of marine biodiversity in the Gulf. Industrial pollution consists largely of discharges from the large-scale phosphate production plants, which are concentrated in Sfax and Gabès. Liquid and solid discharges into the sea at Gabès, without any preliminary treatment, are acidic and have a heavy load of phospho-gypsum (of the order of 600 to 650 tonnes/hour) and other pollutants (cadmium, fluorine). Since the first plants were commissioned in 1972, the total quantities of phospho-gypsum discharged into the sea over the past 30 years have been estimated at nearly 90 million tonnes. The dispersion of these pollutants in the Gulf has seriously affected the coastal marine ecosystems, resulting in a severe recession of the areas covered, in particular by *Posidonia oceanica* sea grass.

Urban pollution, which for many years contributed to the progressive eutrophication of the Gulf, is now well under control thanks to the sustained investment efforts of the Tunisian Government during the 8th and 9th Plans in the sector of urban effluent collection and treatment. These efforts are to be maintained during the 10th National Plan. It is reasonable to estimate that today 70-80% of the urban waste water from the coastal fringe of the Gulf of Gabès is treated before being discharged into the sea.

Urban solid waste is disposed of at disposal sites that are only semi-controlled or uncontrolled (also called "dumps"). In Tunisia, in 2001, there were only 55 disposal sites, capable of absorbing only 40% of the waste produced. This situation has led to coastal pollution, and the Gulf of Gabès has been no exception. Aware of the problem, the Government of Tunisia has given considerable priority to construction of modern sanitary landfills in the 10th Plan under the PRONAGDES Program, implemented by ANPE.

Pollution from ports and ships is a still considerable source of deterioration of the marine environment. Ballast water is also one of the main mechanisms for introduction of alien species which is a major threat to marine and coastal biodiversity. The four commercial ports in the area generate about 100 800 tonnes/year of liquid waste, of which 36 000 tonnes/year contain hydrocarbons and 2560 tonnes/year solid waste. With regard to liquid waste containing hydrocarbons in the fishing ports, it has been estimated that the potential sources are equal to or even greater than those in the commercial ports, as the proportion of used oil is twice what is found in the commercial harbors. It should be recalled that fishing boats do not have any on-board treatment for liquid effluent (in particular that containing hydrocarbons), and this is generally discharged directly into the sea. La Skhira terminal is the only one in the area to possess specific installations for treating ballast water polluted by hydrocarbons. In the case of water used to wash out tanks in ships that have carried chemicals, no reception installation exists at the present time. A MEDA project for equipment to handle waste, ballast water and tank washing water in the Mediterranean, in particular in Tunisia, has recently been started (the first meeting of the Steering Committee took place in Malta in May 2002). The Project will evaluate the treatment needs in the various countries in accordance with the quantities produced and the capacities of the existing installations. A previous project that is now completed also addressed some of these issues : Pollution Management in the South-West Mediterranean (1993-1999) for the three Maghreb countries managed by the World Bank and financed in part by US\$20 million in funds from the GEF.

In the event of accidental pollution, which is a real risk in view of the chemical and oil terminals in the

region, there is still no manual of emergency action procedures that would enable the role and responsibilities of each entity concerned to be optimized.

Direct threat # 3: Fisheries

Fishing is one of the main causes of deterioration of the marine ecosystems and at the same time the direct victim of the resultant impoverishment of the environment.

The fisheries sector accounts for 8% of Tunisia's agricultural production, representing 1% of GDP. It provides permanent income for 60 000 Tunisian fishermen, 30 000 of whom operate in the Gulf of Gabès.

Studies carried out from 1998 onwards by the INSTM in the context of the fish resources evaluation program revealed 1) an almost generalized over-exploitation of fish species, 2) a drop in the production from the Gulf of Gabès over the past decade in relation to national production and 3) a drop over the same period in the share from coastal fisheries in relation to the overall harvest from the Gulf of Gabès, both in value and in quantity.

The decrease in harvest observed for some years now, which particularly affects small-scale coastal fisheries, is indeed the consequence of unsustainable fishing practices. These involve using non-selective or prohibited fishing equipment, working with bottom trawls in areas reserved for coastal fishing, which degrade the natural habitats and jeopardize the equitable distribution of resources, catching immature specimens of certain types of fish outside the legal fishing season, thereby threatening their survival. Large areas of *Posidonia* sea grass and thus the entire biodiversity associated with them have been destroyed by the use of these practices, in particular the use of bottom trawls.

Other threats to biodiversity

In addition to the direct physical causes of degradation of biodiversity observed in the area, such as those discussed above, there are other more indirect or potential causes that in the long term which ruins or significantly diminishes the results of the efforts made by the Government.

Of the potential physical causes, alien species with strongly invasive characteristics represent a potential threat to the original biodiversity. These alien species also threaten the overall balance of the coast and the related objectives of integrated development, such as public health (toxic tides, for example), fishing and seaside tourism. It is therefore urgent to improve knowledge of these species and to develop measures to control them. The Project therefore includes inventory, development of monitoring programs for alien species and a strategy for ballast water management to address alien species.

Systematic concerns regarding protection of marine biodiversity in Tunisia are 1) an insufficient institutional framework and experience for establishment and management of marine protected areas, 2) lack of knowledge of the present situation with regard to the state of the environment and biodiversity in the Gulf of Gabès (which is necessary to define further actions in detail) and 3) insufficient involvement of the stakeholder groups in understanding and implementing identified measures for conserving and managing the natural environment.

At present the direct threats to biodiversity degradation are reasonably well controlled, as described in the diagnostic report prepared during Project preparation activities. The present Project will concentrate on the indirect threats to biodiversity in order to ensure that actions are implemented over the shortest possible time to meet the international and national objectives for biodiversity protection and sustainable development of the coastal area of the Gulf of Gabès.

Tunisian Government strategy

There are several general policy documents concerning the environment, biodiversity and development that support specific action programs. The National Strategy for the Protection of the Environment and

Sustainable Development defines priority areas and the actions to be undertaken.

Among the most important actions carried out to date, the National Action Plan for the Environment (NEAP) and the National Strategy and Action Plan for Biodiversity deserve mention. The latter, drawn up in particular with financial assistance from the GEF (GEF Biodiversity Enabling Activity, carried out by the World Bank) involved extensive participation by universities, research centers, ministries, agencies and the major environmental NGOs.

The priorities expressed in the National Strategy for Biodiversity include in particular 1) improvement of scientific knowledge, 2) prevention of further deterioration of genetic capital and biodiversity, 3) better protection and management of crucial ecosystems, 4) integration of the protection of biodiversity in the sectoral strategies concerned and 5) strengthening of the institutional and regulatory framework. In addition to the simple strategic context, the Tunisian Government secured the essential resources for implementing its environmental priorities by creating the necessary institutional framework and devoting considerable investment to the environment when scheduling the 9th and 10th Plans.

There is also a real awareness that in certain sectors of development, such as the management of natural resources, measures must be drawn up in close collaboration with the affected communities so as to be effective in the field. Many activities have been undertaken in this respect in rural areas by the Ministry of Agriculture, Environment and Water Resources (MAERH), involving future beneficiaries or users in designing the projects.

Decentralization has already begun in Tunisia and will continue in the coming years, although it is expected to experience institutional and structural difficulties as observed in other countries internationally.

The present Project was therefore designed in complete harmony with the priority strategic aims of the Government of Tunisia in terms of the protection and sustainable management of natural resources. It is based on a participatory approach with the beneficiary communities and also on a regional approach, that complements the decentralization process already underway.

3. Sector issues to be addressed by the project and strategic choices:

The present Project forms part of the Strategy for Biodiversity adopted by the Government of Tunisia in June 1998. The Project is based on the implementation of pilot biodiversity management plans involve the active participation of the communities concerned and is designed with a view of replicability along the coast of Tunisia.

The aim of the present Project is to define and apply pilot methods that are representative of the main sector issues found in the coastal zone and can be easily transposed to other sites. The Project is therefore intended to complement other sector actions through a more comprehensive approach to biodiversity threats, and the definition of more universally applicable methods. The Project address the sector issue of multiple Tunisian agencies being involved in coastal development and the management of marine and coastal resources. The Project will help to improve coordination between ministries and agencies, and participation of other stakeholders to reduce biodiversity threats in the coastal zone. The Project is closely integrated with other ongoing projects, development plans and development programs, focussing especially on implementation methods and processes in order to leverage and occasionally correct ongoing or planned development or conservation activities.

The Project complements another major project in the biodiversity sector: the Protected Area Management Project funded by the GEF in northern Tunisia (three national parks, two of which are forests and the other a wetland area – the Ichkeul Park). A close link will be established between the two projects in order to exchange experiences and methods as they progress. In addition there will be coordination with other regional projects that address similar sector issues (see list of projects co-financed with other Development Agencies in Section D.2 below).

The Government of Tunisia has adopted a National Tourism Strategy. It is obvious that tourist development, while generating major revenue for the country, is also a threat to biodiversity, especially in coastal areas where the concentration of hotels can be extremely high. The Project is a complement to this strategy by focussing especially on the Jerba-Zarzis zone in which there is a high concentration of tourism activity and where potential tourism development could present risks for biodiversity. In the Kneiss Islands, the Project will examine the best alternatives for developing ecological tourism that provides education on biodiversity and can also generate revenue for management activities of the pilot area.

The Project incorporates its biodiversity management plans within Development Master Plans for Sensitive Areas (SDAZS) developed by APAL, thus applying a leverage effect to the initial aims of the SDAZS and their practical implementation. By concentrating on the marine environment, the Project provides an innovative contribution to the principles of the SDAZS, as currently the main focus of SDAZS is terrestrial management.

The GEF Project is in strong symbiosis with the Ministry of Agriculture, Environment and Water Resources's project to improve water quality in the Bou Ghrara by widening the channel under the Roman causeway. In particular, the GEF Project includes additional baseline ecological and hydrosedimentary studies to assure preservation of biodiversity in the long term. From a national point of view, the Project will complement the considerable efforts made by the Government in terms of pollution clean-up, by dealing with the other major causes of biodiversity destruction.

Strategic actions for the Project

The general strategic focus of the Project is to concentrate efforts on indirect biodiversity threats that will halt the decline in biodiversity (which could accelerate rapidly at any time), as opposed to the major direct biodiversity threats which are being addressed by the many major national investments in urban infrastructure, urban land use planning and investments in industrial de-pollution activities. The strategic focus is on complementary activities to the national baseline investments in environmental protection .

The total cost of the GEF scenario is estimated at US\$ 287.7 million, as set out in the Annex on Incremental Cost Analysis. The alternative proposed for GEF funding is based on and developed from this baseline scenario. This project will pilot ways to mainstream biodiversity issues into development sectors in which the Government invests heavily but for which sustainability benefits are still largely unknown. The GEF scenario provide essential information on ecosystem health and identify management of interventions necessary to ensure sustainable development in the coastal zone.

Throughout the Project area and at all levels ranging from small coastal communities to large Government institutions, the GEF scenario involves specific management, training and awareness activities aimed at improving the conservation and sustainable use of biodiversity. The GEF will increase collective awareness of the need for and benefits from biodiversity protection and instill in stakeholders a more responsible attitude, which is a prerequisite for sustainable management of the natural environment.

The difference between this baseline scenario (US\$ 278.9 million) and the GEF scenario represents the additional cost of the project, i.e. US\$ 8.8 million. The Government would co-finance part of the additional cost (US\$ 2.74 million), and is thus requesting a GEF grant of (US\$6.06million).

The first set of issues for strategic focus for the GEF scenario is on specific geographic areas where there are high levels of biodiversity that should be maintained. The focus on a large scale effort for all of the Gulf of Gabès strictly speaking has not been adopted because such a large area can only be restored very slowly over a timescale that is quite out of keeping with the objectives of the present Project.

The second set of strategic focus addresses the systemic biodiversity issues through knowledge and capacity building. The Project is choosing to support : (i) baseline data required for biodiversity; (ii) applied biodiversity monitoring to understand the major interactions within the marine and coastal

ecosystems; (iii) capacity building to enforce the legal framework and regulations, and (iv) public awareness and participation on the systemic and site specific biodiversity issues.

It is recognized that there is a long term shrinkage of the *Posidonia oceanica* sea grass beds, that will be difficult to reverse within a human timescale. However the pressures that have caused these decreases are poorly understood, both in terms of basic ecological processes and in terms of geographic locations. The Project will undertake an initial program of upgrading the baseline data, and applied monitoring research to identify some key parameters of the interactions between sea grass beds, fish reproduction, spawning and population growth to demonstrate on a pilot basis the most appropriate management mechanisms for biodiversity conservation.

The proposed range of actions for the Project comply fully with the strategies of the Government of Tunisia, the GEF and the conclusions of the Diagnostic report on the Gulf of Gabès. They proposed actions were also adopted on to be compatible with the Project implementation period (5 years) and the anticipated budget.

The Gulf of Gabès has been badly degraded in the past by trawling, by domestic (household) wastewater pollution and industrial wastewater pollution (phospho-gypsum). The problem of domestic wastewater pollution is well on the way to being solved along the coasts of Tunisia as a whole thanks to a national investment program to extend the sewer networks and construct wastewater treatment plants under the national agency responsible for wastewater - ONAS. The same is true of solid waste, for which an ambitious program to improve collection and disposal (the ANPE's PRONAGDES program) is in progress. As far as phospho-gypsum is concerned, the option of on-land storage has been adopted so as to eliminate industrial effluent disposal into the Gulf of Gabes at the production plant at Gabès. The other major phospho-gypsum production plant at Sfax already uses a dry process, and there is no liquid effluent into the Gulf. For the Gabès plant the technical studies have been carried out and investment funding sought (assistance from the European Investment Bank is agreed in principle) and the industrial rehabilitation investments will be put into effect in the coming years. The investment funds committed for these activities far exceed (over US\$100 million) the amounts available through the GEF.

It is important to recall that pollution is only one of the main causes for the loss of biodiversity. Its importance is due especially to its large economic consequences and its direct effect on human health. In contrast to other causes of loss of biodiversity, pollution is often relatively circumscribed geographically and there has thus been strong local and national priority in Tunisia to significantly reduce its effect. For example, with regard to loss of marine biodiversity, pollution is now less significant than coastal development, over-fishing, trawling, the introduction of alien species and the absence of protected marine areas.

A legal and regulatory framework for the protection of the marine environment does exist in Tunisia. The regulations are sector specific to the areas of activity that may potentially cause damage. The main issue is that enforcement of these regulations are not sufficient at the present time.

As the major land-based pollution sources are being addressed by the Tunisian Government by investment in municipal and industrial wastewater treatment plants, and ship-generated pollution addressed through on-going projects, it seems pertinent to concentrate the strategic Project efforts on systematic issues where integrated management could prevent a further decline in biodiversity.

On the basis of these observations, it was decided that the present Project should strategically support

- (i) the protection of key existing ecosystems because it does not seem feasible to rehabilitate large areas of *Posidonia oceanica* sea grass beds; this would probably take generations to achieve;
- (ii) measures to address the systemic biodiversity aspects of pollution control, fishing, alien species, accidental events, etc. Targeted and strategic programs are planned to strengthen existing human resources within the Tunisian civil service and in the general civil society. These activities are aimed at ensuring more effective application of the biodiversity aspects of existing regulations, development

of guidelines for improving sustainable fishing techniques, public awareness of over-fishing issues, and targeted activities such as more effective ballast water management to eliminate release of alien species.

In summary, the Project will strategically focus on activities on site-specific geographic areas and on capacity building to achieve benefits over a realistic time scale.

Selection of the pilot sites

Overall 6 pilot sites have been selected for strategic focus in this Project, because of the biodiversity aspects highlighted below. The pilot sites are as follows (listed in order from north to south):

- **Kerkennah Islands**
- **Kneiss Islands**
- **Gabès Oasis** (the western-most coastal oasis)
- **Gulf of Bou Ghrara**
- **Bahiret El Bibane**
- **a sea grass area (initial experimental pilot site near the Kerkennah Islands)**

The Kerkennah Islands, Kneiss Islands, Gulf of Bou Ghrara, and Bahiret El Bibane are all examples of areas that are currently well preserved from the point of view of marine biodiversity or are sufficiently well preserved for damage not to have become irreversible. In addition, an initial experimental pilot **sea grass area** has been located near the Kerkennah Islands as representative of the unique biodiversity of the Gulf of Gabes. During the Project this site would be expanded or another larger location for sea grass management would be undertaken to move to full-scale implementation.

All these six pilot management sites display a high level of biodiversity ("hot spots") or noteworthy biodiversity (examples of: (i) huge beds of *Posidonia* sea grass (ii) pivotal ecosystems of the Mediterranean (iii) unique "banded" grass beds (iv) exceptional concentrations of birds). The 6 selected pilot sites correspond to the most important sites in terms of overall biodiversity. By protecting them, most of the overall value of the Gulf of Gabès is preserved. The preservation of these natural habitats and the optimization of integrated management are realistic aims, when the management methods are developed with the willing participation of the adjacent populations and all other stakeholders.

The creation of **a sea grass area** will be an exceptional asset, in that it addresses three issues simultaneously: (i) conservation of species and ecosystem diversity; (ii) piloting a management concept to reach a compromise between the various users, usages and protection, and (iii) applied biodiversity monitoring on ecological interactions to identify both biodiversity benefits and benefits for improved catches for small-scale adjacent fishing.

It may be somewhat unusual to propose integrated management for zones and sectors where there is no clearly identified threat as yet (e.g. the Bahiret El Bibane). The reason is firstly that it is easy to predict that this situation will not last. Furthermore, it is easier to introduce management measures when the situation is calm than when it becomes partly irreversible.

While each of the proposed areas is of major interest in terms of biodiversity, it also has specific development and management objectives that are complementary and are more logically included in an approach involving a "management model" that can be replicated in the long term at other points along the coast, with examples such as: ecotourism potential for Bou Ghrara, creation of an ASPIM nature reserve on the Kneiss Islands, management of natural resources in a privatized framework (fishing

concession) for the Bahiret El Bibane, management of genetic resources by multiple landowners for the Gabès oasis, management of biodiversity in the context of major tourist development on the Kerkennah Islands, management the sea grass pilot area by multiple stakeholders, including of near shore fish species by coastal communities.

Bearing in mind the constraints imposed by the duration of the Project (5 years) and by the financial and human resources available, Project activities at the 6 sites presented will be carried out at two levels :

- **(i) Implementation of management plans in their entirety for three (3) priority sites: Gulf of Bou Ghrara, Kneiss Islands, and a sea grass area**
- **(ii) Preparation of management plans and incorporation into a medium and long term strategy for the entire Gulf of Gabes - Kerkennah Islands, Gabes Oasis and Bahirat El Bibane.**

C. Project Description Summary

1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The Project consists of four main components. The cost of implementing this project is estimated at US\$ 8.80 million of which US\$ 6.06 million would be funded by the GEF.

Component 1: Institutional strengthening, strategic planning and dissemination. *Estimated cost of component: US\$ 3.01 million.*

The main activities for this component are: (1) Project Management Unit, to be staffed by eight key full-time permanent employees from the Tunisian civil service; included in this activity is office equipment, equipment for the Information Exchange Center (e.g. Geographic Information System (GIS), map printers, digitizing platforms), basic field equipment (e.g. boat, motor, vehicles) and operating costs; (2) Quality assurance and control for the project activities (i.e. scientific, technical and participatory planning activities); this quality assurance will be provided by short term technical assistance experts, and includes workshops to disseminate the interim and final results of activities; (3) Long-term strategy for biodiversity conservation for the Gulf of Gabès region; this activity includes two synthesis workshops to disseminate the project results to scientific and technical groups at the within the Project and at the national, Mediterranean and international levels; this activity will incorporate lessons learned from other GEF projects and will include mechanisms for the replication of the Project activities; (4) Geographical Information System (GIS) to serve as a data base for the Information Exchange Center which is functionally linked to the PMU; this activity will gather all existing technical, scientific and social information concerning the Gulf of Gabès, set up user friendly filing (archiving) system and maintain regular updates on Project activities, as well as coordinate with existing information services (e.g. Observatoires) of Ministries in Tunisia; (5) Strategic Environmental Evaluation (SEE) to evaluate impacts on biodiversity of the mid-to-long term Tourist Development Plan for the Gulf of Gabès; and (6) Strategy to protect biodiversity areas from accidental petroleum and chemical spills.

A detailed description of all Project activities has already been prepared during Project preparation. Each activity is described in the format of a terms of reference, with clear objectives, task descriptions, methodology and outputs. These terms of reference will be incorporated into an operations manual which will allow the PMU to quickly launch all the critical project activities within the first year of implementation. In addition during early implementation training will be provided to the PMU staff for both technical skills (e.g. preparation of participatory management plans; operational plans) and for project management skills to build implementation effectiveness.

Component 2: Training and capacity-building. *Estimated cost of component: US\$ 1.29 million.*

The aim of this component is to strengthen human resources for technical, scientific and participation issues for biodiversity management in the Gulf of Gabès region. The component will consist of: (1) Training for all Project staff (both part-time and full-time) as well as for high level management staff on Mediterranean and international experience in marine and coastal biodiversity management, and in project management skills (e.g. financial management, procurement, progress monitoring, impact monitoring, etc); this activity will combine both classroom training and on-the-job training to ensure an efficient Project launch and an efficient implementation; the goal is to ensure a strong team approach across the various Tunisian institutions to enhance the Project objectives; (2) Public awareness program for the target communities, local stakeholder groups and the general public concerned by the Project; this activity will include experience from the other on-going GEF projects in Tunisia; (3) Capacity building program to strengthen enforcement of biodiversity protection in marine and coastal regulations; this activity is targeted at the staff from the agencies working in day-to-day enforcement of existing regulations for sectors such as fisheries, solid waste, small and large ports, customs, coastal and wetlands protection, international treaties, etc. (4) Socio-economic surveys of the target populations and other stakeholder groups; and (5) Participatory tools and mechanisms: this activity will identify and prepare implementation mechanisms to incorporate participation into the biodiversity management plans.

Component 3: Baseline data acquisition and applied biodiversity monitoring. *Estimated cost of component: US\$ 1.76 million.*

The aim of this component is to update or acquire technical and scientific data required as basic inputs for the biodiversity management plans (see Component 4 below), and then to carry out monitoring of key impact indicators. The activities of this component include the following studies and inventories: (1) Hydrodynamic and water quality studies for the Gulf of Gabès in general, but focussed on the Jerba-Zarzis area in particular; (2) Inventories of terrestrial flora and fauna at the 6 priority sites so as to prepare detailed baseline data for the management plans; (3) Inventory and mapping of the marine plant cover, including *Posidonia* sea grass beds, to follow-up on the gaps and intensity of sampling from existing baseline data; (4) Monitoring network for sea grass beds in parallel with implementation of the management plans; (5) Inventory and monitoring of marine and lagoon species of regional and global interest; this will be carried out in parallel with the implementation of the management plans; (6) Inventory and monitoring of alien species and their distribution within the Gulf; (7) Regional management strategy for ballast water to address alien species; (8) Biodiversity impacts caused by the fishing fleet, including monitoring of impacts within and adjacent to the sea grass areas and recommended changes to fishing practices.

Component 4: Participatory Biodiversity Management Plans *Estimated cost of component: US\$ 2.74 million.*

The main aim of this component is to prepare sustainable biodiversity management plans for the six pilot areas, and implement the plans for the chosen three priority areas. All the plans will be prepared based on a participatory approach. This component includes: (1) General methodology for the participatory biodiversity management plans, for implementation within the existing Tunisian legal framework; (2) Implementation of the biodiversity management plan for the sea grass area; the pilot area for immediate implementation is located in the immediate vicinity of the Kerkennah Islands; the installation of anti-trawling structures and artificial reefs is included in this activity; (3) Implementation of the biodiversity management plan for the Gulf of Bou Ghrara; this activity includes the construction of a visitors center; (4) Implementation of the biodiversity management plan for the Kneiss Islands; this activity includes the construction of bird observation platforms; (5) Preparation (only) of a biodiversity management plan for the El Bibane lagoon; (6) preparation (only) of a biodiversity management plan the Kerkennah Islands; (7) Preparation (only) of a biodiversity management plan for the Gabès Oasis.

The preparation of the management plans for the Kerkennah Islands, El Bibane lagoon, and Gabès

Oasis, will be based on lessons learned from the first three management sites. The implementation of these latter three management plans will be financed by the Government, and already measures are underway to assure financing mechanisms.

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
Component 1- Institutional Strengthening, Strategic Planning and Dissemination	3.01	34.2	0.00	0.0	1.17	19.3
Component 2 - Training and Capacity Building	1.29	14.7	0.00	0.0	1.19	19.6
Component 3- Baseline Data Acquisition and Applied Biodiversity Monitoring	1.76	20.0	0.00	0.0	1.61	26.6
Component 4 -Biodiversity Management Plans	2.74	31.1	0.00	0.0	2.09	34.5
Total Project Costs	8.80	100.0	0.00	0.0	6.06	100.0
Total Financing Required	8.80	100.0	0.00	0.0	6.06	100.0

2. Key policy and institutional reforms supported by the project:

During project preparation the existing institutional structures were reviewed, and concluded that Tunisia has a complete institutional structure with numerous adequate institutions having appropriate regulatory, administrative, policy and applied research responsibilities for the project area. The general conclusion is that no major institutional or policy reforms are required prior to project initiation. Rather the project focus is to strengthen existing policies and existing institutional through capacity building, focused monitoring and baseline data acquisition, with emphasis on information exchange and sharing among all the institutional stakeholders, as well as the target population (as described below).

At the national level, the Project initiates strengthening of the institutional framework, by implementing a new means to achieve biodiversity protection, that complements the on-going decentralization of government services. In addition, there will be strengthening of the regulatory framework applicable to the protection of marine and coastal biodiversity. The enhanced approach to existing regulations proposed in the context of this Project, and the mainstreaming of biodiversity issues into regulations over the medium term will enable the country to more effectively meet its commitments with regard to regional and international conventions that have been ratified on this topic.

The Project strengthens the regional institutional framework in terms of biodiversity management, and provides an innovative approach that will be validated through the implementation of pilot biodiversity management plans, that then can be replicated in other regions of Tunisia. The human capacity and institutional tools will also be improved by the implementation of training programs suited to the various levels of regional stakeholder involvement and decision-making.

This Project will be the first in Tunisia to implement at regional level procedures and principles for protecting and managing marine and coastal biodiversity based on the active participation of the local population and on the economic development of these resources, in particular in terms of exploitation and tourism. The Project will cover six sites that have been selected for their intrinsic value in terms of biodiversity and for their representative ness with regard to coastal issues. The management techniques to be chosen should be easy to apply in other regions of the Tunisian and Mediterranean coasts.

The management plans will also incorporate mechanisms to allow income generation to cover recurrent costs, thus ensuring the relative independence of these areas with respect to government budgetary risks, a necessary element to assure sustainability and replicability. In order to apply a coherent approach over the Project area, that is consistent with the national context, the Project will coordinate these income generation mechanisms with the biodiversity terrestrial protected areas supported by the

GEF for sites in the north of the country.

3. Benefits and target population:

Biodiversity benefits

The Project will increase coastal and marine areas that are effectively protected. It will improve and reinforce the protection of species that are of global or regional value and reduce damage to unique ecosystems. It will develop practical models to guide the implementation of participatory biodiversity management in other parts of the region. It will update information and data relating to biodiversity in the Gulf of Gabès and form a scientific data bank concerning the Gulf that will improve overall knowledge of biodiversity in the Western Mediterranean basin, in particular with regard to the situation of alien species.

Sites such as Bou Ghrara and the Kneiss Islands are of global importance in terms of bird life. The Kneiss Islands have already been declared a reserve and recently classified as a Specially Protected Area of Mediterranean Interest (ASPIM). The Bou Ghrara site offers a high potential for the economic development of its biodiversity owing to the dense concentration of tourist facilities around its perimeter. The Gabès Oasis site is exceptional in regional importance, being the only example of a coastal oasis environment. Severely threatened by urbanization, industry and inappropriate cropping practices, this oasis could quickly lose all its biodiversity value and agricultural production capacity. Preparing its management plan is an essential first stage for the sustainable protection of plant species that are unique in the region and are currently threatened with disappearance.

The area of El Bibane and the Kerkennah Islands is home to exceptional benthic formations that are unique in the Mediterranean and, in some cases, in the world. As these areas are situated in sectors that are already or will in the medium term be subjected to pressure from coastal development in general and tourist hotel development in particular, it is important to anticipate the degradation of the environment in order to preserve their exceptional biodiversity while at the same time respecting local economic development. The preparation of management plans proposed in the context of this Project is a first step towards attaining these long-term objectives.

More generally, the huge areas of *Posidonia* sea grass that are the outstanding feature of the Gulf of Gabès have shrunk severely over the past few decades owing to destructive fishing practices, possibly due to serious industrial and urban pollution, and possibly due to other causes. Today, it is necessary to preserve areas where this sea grass still survives in a good state, so that the highly productive ecosystems that depend on it can be managed and help to renew the fish population in the Gulf. The creation of a sea grass area with a protective perimeter of anti-trawling structures (and possibly artificial reefs) will simultaneously preserve marine biodiversity, encourage the restocking of coastal waters and eventually improve revenues from small-scale coastal fishing.

National and local benefits

The protection of rare or endemic species will help to maintain the wealth of Tunisia's biodiversity. Training for the institutions and NGOs concerned, strengthening the legal and regulatory framework for biodiversity issues, and institutional arrangements at regional level will help to strengthen the country's overall capability in terms of the protection and management of its natural resources. The management models and funding mechanisms adopted for the pilot areas will be easily replicable in other parts of the country, thus reducing both implementation costs and the risks of future failure.

At local level, the Project will implement and test mechanisms enabling local communities, local authorities and NGOs to manage their natural resources in a more efficient and sustainable manner. More specifically, the Project will address better management of small-scale coastal fishing by encouraging the reproduction of species and the restocking of coastal waters by managing activities in the Gulf of Bou Ghrara and the sea grass area. At the same time, the new management plans will also seek to develop alternative sources of income, primarily from tourism, so as to provide additional employment that may alleviate the poverty that still persists in rural areas in the south.

Target population

The target population includes: communities that exploit coastal marine resources at the various pilot sites chosen, comprising first and foremost small-scale fishermen, farmers in the Gabès oasis, local NGOs active in the development and environmental protection sector, local professional organizations, local authorities, and the tourism and hotel sector (in particular in the Jerba-Zarzis area).

Before the Project is evaluated at the appraisal stage, a detailed analysis of the target population will be carried out. The aims of this analysis will be: (a) to identify the potential beneficiaries and stakeholders in the Gulf of Gabès region concerned by Project activities; (b) to identify the positive and negative impacts that the integrated management plans could have on the parties concerned; (c) to lay the foundations of a community participation strategy to be followed during Project implementation and other socio-economic studies considered necessary for Project monitoring and evaluation.

4. Institutional and implementation arrangements:

The Tunisian Government recently reorganized many Ministries in September 2002, and of particular relevance to this Project, the reorganization affected the former Ministry of the Environment and Regional Development (MEAT) as well as several agencies under its aegis (including the APAL). The final selection of Project implementing agency is the General Directorate for Environment and Quality of Life (DGEQV), which is now part of the new Ministry of Agriculture, Environment and Hydraulic Resources (MAERH). The Director General of DGEQV reports to the new Secretary of State for Environment who in turn advises the Minister of MAREH on environmental issues. This decision to implement the project through DGEQV will build upon the capacity gained during implementation of the PDF-B resources for preparation of the Project.

Other institutions will also be involved as key partners in implementing the various components of the Project. The three key partners will be: (i) CITET would carry out the activities for capacity building, training and dissemination as described in Component 2 above; (ii) Institut nationale des sciences et technologies de la mer (INSTM) would assume overall responsibility the baseline inventories and applied research monitoring studies as described in Component 3 above; and (iii) APAL would be responsible for the participatory management plans described in Component 4 above.

Project implementation structure: Three types of entity are proposed for implementing and supervising the Project:

1. Project management level: The *Project Management Unit (PMU)*, physically located at offices in the Project region, with administrative support in Tunis, will be the main entity at operational level. It will be responsible for the appropriate implementation of the Project from the technical, scientific and financial standpoints and will ensure overall coordination of activities. The Project Director, will be assisted by a full-time Technical Coordinator and by a full-time Administrative Coordinator. Within the project management team will be several additional full-time staff as follows : i) marine and coastal biodiversity specialist; ii) specialist in biodiversity management plans; iii) capacity building, training and dissemination specialist iv) specialist in GIS working together with a document/data information specialist. The PMU will be located close to the areas where field work is carried out to ensure sure close permanent relations in the context of the pilot areas and the participation of all the communities concerned. The anticipated PMU location would be at the town of Gabès.

2. Local participation level. Three *Local Development Committees (LDC)* would be set up at Gabès, Jerba-Zarzis and Kneiss-Kerkennah to act as coordination and participation entities. The aim of these committees would be to take be in direct contact, and regular communication with local communities, people and groups. They would participate in particular in formulating, discussing and

validating the integrated management plans for each pilot area.

3. National coordination level. The *Steering Committee*, would be the primary oversight entity at the national level and includes representatives of the following organizations: MEAT/DCNMR (Chair), Ministry of International Cooperation and Foreign Investment, Ministry of Finance, Ministry of Industry, Ministry of Economic Development, Directorate General of Merchant Shipping (Ministry of Transport), Directorate General of Fisheries and Aquaculture (Ministry of Agriculture), Directorate of Industrial Environment (MEAT), Regional Directorate for the Southern Coast (MEAT), INSTM, ONAS (Central and Gabès), APAL (Central and Jerba), ANPE (Central and Sfax). Usually the Steering Committee would meet twice per year to ensure that the activities and measures undertaken by the Project are consistent with the ongoing or planned strategies, actions and objectives of other sectors of development.

In addition, a smaller *Project Management Committee*, consisting of representatives of the major project implementation partners (DGEQV, CITET, INSTM and APAL), will meet regularly (for example: approximately bi-monthly) to provide direct management input to implementation progress. This Committee will review and resolve implementation issues for technical, financial and procurement aspects of individual activities, and also coordinate issues of common interest between themselves.

Monitoring and evaluation

Progress reports will be prepared twice per year by the PMU (tentatively by 31 March and 30 September each year). These reports will be in an agreed format and will describe the physical and financial progress of the Project and the progress of Project performance indicators. They will also describe the corrective measures implemented in the event of any pronounced delay in Project components.

It is planned to hold an international workshop to disseminate Project progress every 18 months to discuss the new baseline data and monitoring results, as well as various methodologies developed for the Project. The emphasis will be on an open information exchange among all Project participants, and consultations with leading practitioners from the Mediterranean region and internationally..

A evaluation will take place at the mid-point of the Project, in the third year following the effective start-up of the Project. After 6 months from the date of closure of the Project, the PMU and the implementing agency will prepare and submit to the Bank a completion report describing the execution and operation of all the Project components, the costs and benefits, achievement of objectives, long-term application of results and prospects for duplication.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

During the design phase for the Project concept, various institutional, geographical and technical alternatives were considered with a view to choosing those that would make the Project easy to implement and give the best chances for Project success. The choices among the various alternatives are based on common decision criteria: a) strategic regional goals for the Gabes region by the Government of Tunisia, and the level of financial resources committed or budgeted, b) Country Assistance Strategy between Tunisia and the World Bank, and c) funding eligibility criteria of GEF.

Selection of Project strategic focus:

One of the issues that is highly associated with the Project is heavy industrial pollution, primarily from the

phospho-gypsum processing sector, as well as urban pollution. The analysis undertaken during Project preparation shows several conclusions: a) The efforts by the Tunisian Government in managing urban waste water have been considerable, and the rate of waste water collection and treatment today is much higher than that observed in numerous other countries in the region; these efforts will be continued during the 10th Plan. b) There is insufficient collection and treatment of household solid waste at the present time, but a major effort is to be made in the coming years via the ANPE PRONAGDES program. c) Studies have been carried out for several years concerning eliminating the main source of pollution in the Gulf (i.e. phospho-gypsum plants), by replacing the processing technology so that waste by-products are stored on-land, rather than by disposal into the Gulf. Financial funding discussions are well advanced (EIB, for example).

The general conclusion is that biodiversity threats from water pollution and discharges are largely under control and that the water quality situation is improving and should continue to improve. Much of the de-pollution sector is already securely funded, and the scale of funding committed to these activities amounts to several hundred million dollars, i.e. on a different scale from that expected for this Project. For all these reasons, it seemed inappropriate to associate the GEF funds with the direct pollution threats to biodiversity, nor to include a large technical assistance component concerning pollution control. The strategy selected is to focus on the indirect threats to biodiversity.

Selection of Pilot Sites:

From the geographical point of view, the Project preparation analysis covered the entire Gulf of Gabès. The analysis of the current situation shows that while large portions of the Gulf are of limited interest in terms of biodiversity, several sites offer an exceptionally rich diversity still relatively unaffected by economic development and threatening activities. It was therefore decided to target the most exceptional sites with a view to implementing a strategy to preserve them from existing or potential threats as quickly as possible. The chosen option will eventually be extended to protect all sites in the Gulf of Gabès that are important in terms of global and regional marine and coastal biodiversity. The option of rehabilitating sites with degraded examples of biodiversity is considered of little interest as major expanses of *Posidonia* sea grass beds have declined over several decades, due to several interrelated factors including inappropriate fishing techniques, possible natural factors and water quality pollution from urban and industrial discharge. With the very slow natural regeneration and expansion of *Posidonia* sea grass beds, there is little chance to rehabilitate biodiversity areas within a human timescale.

Alternative institutional arrangements considered:

From the institutional point of view, the option chosen is to incorporate the project coordination and management unit into an existing entity, namely a Ministry or Agency. This option gives the best chances of Project sustainability. The option of creating an independent entity was eliminated because i) the institutional framework in Tunisia is already crowded with many overlapping entities, and the addition of a new entity would not clarify the situation, and ii) because upon Project completion there is a risk that this new entity would not have sufficient resources to maintain and replicate activities, given the continual budget pressures on the Tunisian civil service.

With the recent reorganization of the Tunisian ministries, several possibilities were available at the time of Project preparation. Four possible options for the Project implementing agency were evaluated: (i) General Directorate for Environment and Quality of Life (DGEQV); (ii) Regional Directorate for the Southern Coast (DRLS), (iii) APAL and (iv) ANPE. The comparison of options is described in detail in Section E.4 below.

As described above the DGEQV within MAERH was chosen to implement the project so as to build upon the experience gained during project preparation and because of their institutional mandate to coordinate environmental strategy among the Tunisian institutions, giving it a favorable position for replicating the models developed by the present Project.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Participatory natural resources management; poverty alleviation	Natural Resources Management Project (Loan 4162, \$26.5 m ongoing)	S	S
Participatory management of national parks; conservation of global biodiversity; partly financed by GEF	Protected Areas Management Project (Total project \$9.88 m ongoing)	S	S
Participatory natural resources management; poverty alleviation	Northwest Mountainous Areas and Forestry Development Project (Total project \$44.86 ongoing)	S	S
Integrated water resources management; conservation of water resources and protection of the environment	Water Sector Investment Project (Total project \$258 m ongoing)	S	S
Agricultural sector policy adjustment and investment	Second Agriculture Sector Investment Loan (ASIL2) (Loan 4278, \$42 m ongoing)	S	S
Wastewater sewer trunk lines, rehabilitation of sewage water treatment plants, and technical assistance	Water Supply and Sewerage Loan (Loan 3782, \$58.0 m ongoing)	S	S
Other development agencies			
UNDP financed by GEF and FrenchGEF	MEDWET Regional Project: Conservation of Wetland and Coastal Ecosystems in the Mediterranean Region - Ongoing		
UNDP to be financed by GEF	Protected Marine Areas - IN PREPARATION		
MEDA / REMPEC	Project for port facilities for handling ballast water and hydrocarbons in the Mediterranean - Ongoing		
European Investment Bank / Govt of Tunisia	Project for phospho-gypsum land-based waste storage at Gabès - Ongoing		

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

The activities of many regional programs will be complemented and even strengthened by the Project:

1. The recently initiated REMPEC project concerning reception capacity for waste and ballast water from ships will be directly strengthened by the GEF Project, which is to study the means for implementing regulations to protect the marine and coastal environment (listed above).
2. The Mediterranean Action Plan for the (MAP)-PAP/RAC. The ongoing coastal zone development program included in particular the PAC-Sfax, which has now led to one of the most important coastal rehabilitation schemes, the Taparura project. The Project will complement this rehabilitation work by improving the protection of biodiversity in the Kneiss Islands and initiating protection in the longer term for the Kerkennah Islands.
3. The RAC/SPA program concerning management of the ASPIM and the protection of biodiversity may be directly strengthened by the Project as it has chosen to work on the Kneiss Islands, which have recently received ASPIM classification.
4. METAP contributed considerably to the creation of the APAL. The Project directly concerns numerous APAL activities, and has included this agency as a special partner. The Project will thus help to improve skills within APAL and thus complement the initial actions of the METAP.

Coordination between this Gabès Project and the Marine Protected Areas project currently under preparation (implementing agency UNDP for GEF financing) is on-going. The Tunisian agencies concerned (i.e. DGEQV and APAL) are involved in both projects, and regular meetings in Tunisia are also being organized with the two GEF implementation agencies (i.e. UNDP and the World Bank). The coordination will ensure that activities and geographic areas are distinct without overlapping efforts.

3. Lessons learned and reflected in the project design:

The two GEF Projects relating to biodiversity protection in Tunisia (WB/GEF P048315: Protected Areas Management Project and the regional project : Conservation of Wetlands and Coastal Ecosystems in the Mediterranean Region) are in implementation and at this point have lessons to provide useful information to this Project. Both these two projects are being implemented through the same Tunisian agencies (i.e. DGEQV and APAL) involved in this Gabès Project, and the lessons related to coordination between agencies has been incorporated into the Project design. During this Project's implementation, feedback from the above projects will be formally evaluated, along with a system for exchanging information on lessons learned, to ensure that common issues are shared between projects, such as the mechanisms for community participation, cost-recovery mechanisms and employment generation.

During the design phase, this Project has taken into consideration the post-evaluations carried out by the GEF concerning its biodiversity projects in Africa, and other project evaluations carried out by the World Bank in the sectors of biodiversity, conservation and ecotourism. The key points identified, which influence the success or failure of projects, were clearly considered and taken into account in designing the Project, including: the participation of stakeholders, clarity of objectives and components, allowance for past experience, identification of risks, efficiency of implementation, analysis of institutional capacity and the use of appropriate indicators.

4. Indications of borrower and recipient commitment and ownership:

The Government of Tunisia has over the past few years defined the framework in which it intends to protect and manage the country's biodiversity. The National Action Plan for the Environment (1997), the National Strategy and Action Plan for Biodiversity (adopted in 1998), and its ratification of the major international and regional conventions and agreements relating to this sector all indicate the Government's high level of commitment in this area.

The Government of Tunisia sought the assistance of the World Bank in preparing this Project in 1999. A grant was awarded for this from the GEF's Project Development Fund. The DGEQV from MAERH (formerly within the Ministry of the Environment and Regional Development) is responsible for preparing this Project. An inter-ministerial Steering Committee and Management Committee combining representatives of the ministries and agencies concerned were set up on commencing Project

preparation, in order to supervise its implementation. The numerous meetings and constant attention to this Project by the many stakeholders, show Tunisia's strong commitment and ownership.

The Government is seeking additional financing to complement the biodiversity activities to this project, and is in active discussions with several bi-lateral and multi-lateral organizations.

5. Value added of Bank and Global support in this project:

The Bank is already involved in the Protected Area Management Project in northern Tunisia, the experience from that project is already being transferred to the Gulf of Gabès Project. Feedback from the early implementation is being integrated into this Project's design, as well as the lessons learned from the Bank's past experience in the sector of marine and coastal biodiversity (see Assessment of Integrated Coastal Area Management Initiatives in the Mediterranean-1998 to 1996 : published by METAP).

The value added by the GEF is due to its overall experience in Project design and implementation. The GEF funding principles will enable the Government of Tunisia rapidly to undertake actions in favour of biodiversity that might not otherwise have been funded as a short-term budgetary priority for the country. The GEF's contribution will mean that decentralized, participatory management plans can be set up quickly to preserve ecosystems and species of global value and at the same time assist in the socio-economic development of coastal communities in southern Tunisia and contribute to a reduction in poverty. At regional level, the GEF's contribution will also help with the acquisition of scientific knowledge and exchanges with institutions in other Mediterranean countries involved in similar projects.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

- Cost benefit NPV=US\$ million; ERR = % (see Annex 4)
- Cost effectiveness
- Incremental Cost
- Other (specify)

The total cost of the GEF scenario is estimated at US\$ 287.7 million, as set out in the table on Summary of Incremental Costs in Annex 4. The difference between this baseline scenario (US\$ 278.9 million) and the GEF scenario represents the additional cost of the project, i.e. US\$ 8.8 million.

The Government would co-finance part of the additional cost (US\$ 2.74 million), and is thus requesting a GEF grant of (US\$6.06million).

2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

Fiscal Impact:

To be discussed in final project document - PAD

3. Technical:

The project implementation timetable is designed to accelerate actions “on the ground” at the sites where management actions are planned.

Firstly, an experimental location for the sea grass management area is now selected close to the

Kerkennah Islands covering an area of 3-5 km sq., with depths of -5 to -35 metres. A short-term operational plan will be implemented at this site that will allow the testing of appropriate designs, transport methods and installation techniques for 100-200 anti-trawling and artificial reef structures. In addition, initial testing of participation techniques will also be implemented as part of the operational plan. This will facilitate an early replication of the appropriate techniques for the protection of sea grasses, so that the experimental site is expanded in geographic size or that a second priority sea grass site is selected for implementation.

Secondly short-term operational plans will be prepared for the other 5 sites with emphasis on identification and actions for a few priority issues at each site. The implementing agency with the Project Management Unit will implement concrete management actions within 3-5 months after Project effectiveness as a preparatory phase to long-term management measures.

4. Institutional:

National Institutional Framework

Several ministries and institutions are concerned to varying degrees with the protection of biodiversity, while others who play a role in the economic development of the Gulf of Gabes region exert pressures on biodiversity and marine resources. At the beginning of September 2002, a major government overhaul took place and one of the measures involved combining the Ministries of Agriculture and the Environment into a Ministry of Agriculture, the Environment and Water Resources (MAERH), which comprises two Secretaries of State: one for Water Resources and Fisheries and one for the Environment. The main ministries concerned with biodiversity protection are now :

- Ministry of Agriculture, Environment and Water Resources (MAERH) which houses several agencies of direct relevance to the Project, including: (i) General Directorate for Environment and Quality of Life (DGEQV), the Directorate General of Fisheries and Aquaculture (DGPA), (ii) the National Wastewater Agency (ONAS), which is responsible for urban sanitation, and (iii) the National Environmental Protection Agency (ANPE) which carries out environmental monitoring and certain solid waste management activities,
- Ministry of Public Works, Housing and Regional Development (MEHAT) which houses the Coastal Protection Agency (APAL), responsible for ensuring the coherence of coastal programs, managing land in these areas, coastal development studies and managing the coastal monitoring unit.
- Outside the government sector, other types of associations, professional federations and scientific bodies are also involved in the protection of marine and coastal resources.

The major ministries concerned with economic development are:

- Ministry of Tourism, Crafts and Leisure that is generally responsible for planning and developing tourism areas, and which also houses specialized agencies AFT and ONTT
- Ministry of Public Works, Housing and Regional Development (MEHAT) which houses the Directorate General of Regional Development (DGAT) and APAL (as described above).

The main challenge for the Project from the institutional standpoint will be to ensure effective communication between the institutional players so that the accomplishments of each agency on piloting can be shared to facilitate biodiversity protection, and eventually used for replication purposes.

4.1 Executing agencies:

The preparation work for this Project has been undertaken at the national level by the General Directorate for Environment and Quality of Life (DGEQV) within MAERH. A Steering Committee, Project Management Committee and Project Management Unit (PMU) are being set up for this purpose.

Four main options appeared pertinent for this role: (i) the national level DGEQV within MAERH, (ii) the Regional Environmental Directorate for the Southern Coastal Region, now part of MAERH (iii) APAL, and (iv) ANPE.

Other options considered were: (i) the Directorate General of Fishing and Aquaculture of the Ministry of Agriculture (DGPA), part of MAERH, and (ii) Southern Development Office (ODS) were considered but not adopted, especially because the administrative responsibilities and human resources capacities are not compatible with proposed Project activities.

The main options were evaluated on the basis of the following five criteria:

- 1. Replication and sustainability:** Potential for capitalizing on Project experience to replicate it and ensure lasting results for the Gulf of Gabès.
- 2. Role:** Pertinence in relation to Project objectives and activities to be carried out.
- 3. Leadership and partnerships:** Ability to coordinate the activity of other agencies, to develop partnerships with the various target participation groups and to manage a new integrated management organization.
- 4. Available resources:** Available resources at regional level and possibility of redeploying them for the Project.
- 5. Efficient management :** Administrative ability to control procurement and financial management tasks. Resources available to sign contracts speedily and to ensure effective financial management.

National General Directorate for Environment and Quality of Life (DGEQV). As the main national level unit responsible for coordination of environmental issues, and coordination of mainstreaming environmental strategies, the DGEQV has the capacity to coordinate and supervise activities of other national level agencies, as well as to interact with all other stakeholders. The DGEQV also has the experience of coordinating several international projects with external bi-lateral and multi-national agencies, and is experienced with implementation issues for technical, financial and procurement aspects. This Project is considered a national level project in Tunisia, and the precedents established during this project can best be replicated by a national level entity.

Regional Environmental Directorate for the Southern Coastal Region (DRLS). As main contact for the regional and local authorities, the DRLS has the capacity to coordinate and supervise activities by the other stakeholders and government environmental agencies at regional level. However, the consequences of the recent reorganization on the future role of the regional directorate are not yet clear. Following the recent reorganization, it might also be possible to envisage the option of the CRDAs. However, these do not have an environmental role, but rather an agricultural objective. Furthermore, the Project area is covered by three CRDAs, which would pose a problem of coordination among three separate CRDAs.

Agence de Protection de Littoral (APAL). APAL has set up partnerships and close collaboration with the various stakeholders involved in coastal management. The agency has two basic roles: (i) enforcement and permits for all physical structures within public marine lands (*Domaine public maritime - DPM*) (ii) land-use planning for the littoral zone. This is a young agency, but its biodiversity aspects may be curtailed with the recent government reorganization, although it has experience of managing a GEF project (i.e. for wetland areas). APAL has the administrative flexibility to manage Project procurement and funds. At this point it is not clear that APAL will continue to have environmental responsibilities, and it may be limited purely to managing the building permits within the *DPM*. Thus, in spite of its national responsibilities, the APAL might have difficulty replicating the Project on other coastal ecosystems unless its environmental role is clearly confirmed.

Agence National de Protection de l'environnement (ANPE). The main responsibility of ANPE is to protect against all forms of environmental degradation, including the control of pollution. ANPE gained useful experience in an interesting international coastal management project, the Sfax Coastal Development Plan (UNEP/MAP), carried out during the 1994-1998 period. Like the APAL, ANPE has flexible administrative arrangements to manage Project procurement and funds. ANPE is housed within MAERH, that now has the combined mandate to integrate the management of water and environmental issues, including the marine environment. ANPE could duplicate the Project activities and apply the results on a sustainable basis. Although ANPE has successfully managed several World Bank initiatives, it does not have a specific institutional mandate for coastal and marine areas.

Conclusion: From this evaluation, it appears that the two agencies (ANPE and APAL) with their regional offices and national dimension, meet the requirements of regional and local implementation, as well as an efficient management structure. However the decisive factors that favor DGEQV is their institutional mandate to mainstream environmental issues and to coordinate among national level agencies environmental strategies. This combined with experience in World Bank financing and implementation procedures justifies their choice for the implementing agency for this Project.

4.2 Project management:

To be discussed in final project document - PAD

4.3 Procurement issues:

To be discussed in final project document - PAD

4.4 Financial management issues:

To be discussed in final project document - PAD

5. Environmental: Environmental Category: B (Partial Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

This Project is composed of mainly technical assistance activities, and only a few small scale physical structures will be constructed to assist in the biodiversity protection at the three priority sites chosen for implementation of the management plans. The proposed physical structures consist of a visitor reception building for the Gulf of Bou Ghrara area, observation platforms for Kneiss islands area and anti-trawling structures and/or artificial reef structures at the perimeter of the sea grass area. The final site locations and final designs for these structures will be detailed during the preparation of the management plans for each pilot area to avoid potential environmental impacts.

As the potential impacts are negligible, this project does not require a separate Environmental Assessment report. Any issues of concern will be addressed by the biodiversity management plans, and appropriate mitigation and monitoring measures will fully developed in conjunction with the management plans for the biodiversity pilot areas. A short 1-2 page summary of the environmental mitigation and monitoring measures incorporated into the project will be prepared. This will be in the format of an

Environmental Management Plan (EMP).

5.2 What are the main features of the EMP and are they adequate?

The mitigation and monitoring measures are fully incorporated into the Project are considered adequate. The main features are described in the Section C1 above.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: September 3, 2003

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

During design of the Project several workshops with the participation of many local stakeholders were undertaken in the Project area. The diagnosis of biodiversity threats and related impacts were discussed at the workshops, as well as the mitigation and monitoring measures incorporated into the Project design.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

The technical and biological indicators to be used will be based on results of applied monitoring and operating management plans for the pilot areas: The indicators, as described in Section A2 above, are: variation of the density and distribution of key habitats (e.g. annual surveys of sea grasses or keystone species in the Project management areas); change in trends in alien species (e.g. annual surveys); establishment of new routine biodiversity and water quality monitoring programs; variation of water quality (e.g. regular monitoring).

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

The known key social issues that arise from the Project objectives of biodiversity conservation are linked to different degrees with the economic interests of the population living on the shores of the Gulf of Gabès, and who also depend to differing degrees on the marine and coastal resources for their livelihood. The coastal areas, in particularly the southernmost part of the Gulf of Gabès, is an area whose biodiversity is threatened by the expanding tourism and fishing industries, and is also an area of acute poverty and limited resources.

6.2 Participatory Approach: How are key stakeholders participating in the project?

The initial studies identified as key stakeholders those whose sources of income are from tourism, fisheries (i.e. traditional as well as commercial fishing), artisan industries, and other local industries. Participation is seen as one of the essential building blocks to ensure the protection of degraded biodiversity resources, and balance the interests of long-term biodiversity conservation with other investments in the national interest. Initial steps towards the formulation of a participatory strategy are based on two key concepts: (a) that the stakeholders must understand the Project objectives and social development outcomes and in order to take an active part in the decision-making process, and; (b) that their ideas, approaches and solutions must be taken seriously and incorporated into the design of the Project, and in particular into the design of management plans.

While there are institutional and technical measures proposed by the Project, these must be validated and tailored to the specific social realities of each of the pilot sites jointly with the stakeholders. With this approach, no management plans or other measures will be implemented without the appropriate

consultation and participation of the key stakeholders. The target populations will participate to: (i) act as sources of up to date information on the local conditions (fishing, production, etc) which will also serve as an initial mechanism of raising awareness about threats to biodiversity; (ii) react to proposals for management in order to learn what measures the population is willing to enact towards a responsible and sustainable management of the biodiversity resources; (iii) jointly formulate the final agreed mechanisms necessary to ensure protection of ecosystem biodiversity. Included in the participation will be measures to address possible temporary restriction to resources used by the population for their livelihood so that the future benefits (gains) made will be measurable in economic terms and beneficial to the population.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

The Project is based on a participatory approach which consists in the establishment of relations, cooperation and coordination between the Project management unit (with the implementing agency) and all the key stakeholders, including NGOs that are particularly active in coastal and island areas (such as Djerba and the Kerkhennas). The Project has taken into account parallel ongoing government programs that deal with local level development efforts (e.g. Agenda 21 in Djerba and Kerkhennas), other social protection and employment programs (e.g. the 26-26 program) and other donor assisted environmental protection projects that are relevant to this Project and involve civil society. The objective of the approach is to define together with stakeholders the best methods and modalities for the protection and management of resources in order to satisfy the technical as well as the social objectives of the Project. The stakeholders that will be key players in the development and implementation of the Project have been tentatively identified and will be further consulted during the appraisal preparation phase.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

The participatory approach is the only one that can ensure a success for the Project objectives by both government institutions and the all beneficiaries. The approach incorporates systematic and recurrent visits to the selected sites to identify, jointly with the communities and the Local Development Committees, the critical actions to take and their proposed phasing. Second, the PMU in conjunction with the implementing agency will, early in Project implementation, discuss with the population and all other stakeholders the objectives and plans for the life of the Project and the intended benefits, in particular the potential restrictions to access to marine biodiversity resources on which a large part of the population depends. Third, a close link is planned between the management and the population in order to incorporate the most reliable and recent information concerning sources and levels of revenues and to target the most vulnerable populations on the basis of that information.

6.5 How will the project monitor performance in terms of social development outcomes?

The mechanisms to measure and monitor Project performance in terms of social outcome will be determined in the course of preparation when the specific social assessments for the selected sites have been completed and the Project is further refined.

However at this point in project preparation the indicators selected, as described above in Section A2, are: number of awareness campaigns and of local stakeholders participating in project activities; number of active fishermen and revenues generated by fishing communities; number of jobs and revenues generated in the eco-tourist sector; number of visitors to the managed sites under implementation (i.e. Gulf of Bou Ghrara, Kneiss Islands, sea grass area).

7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No

Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

OPN 11.03. During the development of the management plans for the biodiversity pilot areas, issues related to physical cultural property will be reviewed and any potential locations will be appropriately screened to assure the absence of significant cultural property. At this time no issues of concern have been identified. Particular attention will be focused to ensure full compliance with the provisions of this policy due to the diverse human uses of the Gulf of Gabès region.

OP/BP 4.12. At this time the possibility of restriction of access to resources that are the basis of livelihoods has not been determined, and will not be determined until the management plans are prepared during Project implementation. To ensure that the Project will be prepared in accordance to the Bank's policy provisions so that, economic livelihoods are not diminished through the Project, a Process Framework will be prepared prior to the PAD stage of Project preparation and prior to the preparation of the management plans.

F. Sustainability and Risks

1. Sustainability:

Project sustainability is a central and fundamental point inherent in the design of each project component.

The proposed institutional strengthening is based on the complete integration of the PMU into an existing administrative structure, specifically DGEQV within and partnership with three key existing Tunisian agencies (CITET, INSTM and APAL). This will avoid a limited duration for the Project Management Unit (PMU) to simply the 5-year period of the Project. As all the key staff of the PMU full-time employees of the Tunisian civil service, the experience gained under the project will be sustained within Tunisia.

The efforts at human capacity-building are widely aimed at the various levels of decision-making in the Gulf region, and their objective is therefore to strengthen the capacity of the numerous agencies and official bodies that at some time or other find themselves responsible for managing and exploiting biodiversity. This approach, often referred to as "mainstreaming", will encourage decision-makers and officials to be more aware of and feel more responsible for the conservation of biodiversity and will help to ensure that daily management and enforcement of existing regulations are applied in a manner that is more responsible and considerate of biodiversity, longer-lasting and sustainable.

The main aim of preparing and implementing management plans based on community participation is to ensure the long-term sustainability of the management activities as identified as of prime interest to the local communities, and consequently to be implemented with their assistance. If during the course of the Project communities do not understand or recognize the utility of the proposed management activities, alternative proposals or techniques of participation will be piloted as the sustainability issue is so central to the Project objectives.

Certain priority areas, such as Bou Ghrara, are located right next to densely concentrated tourist areas. In these cases, the Project will work with the relevant Government agencies and the private sector to identify how the threat of tourism to biodiversity can be transformed into an opportunity for developing and self-financing the pilot area. An approach of this kind aims at sustainability.

Most of the baseline data acquisition studies also include the implementation of biodiversity monitoring procedures, with the aim of ensuring the long-term use and application of results obtained during the period of Project implementation. The creation of an information exchange center also provides easy access reliable and up-to-date information during Project implementation and provide the basic structure for future use. The goal is to transform the center into a permanent regional observatory for the Gulf of Gabès, providing a guarantee of sustainability.

The Project also assumes that local protection of the marine and coastal ecosystems in the Gulf of Gabès can only be implemented effectively by mainstreaming the principles of environmental management. The proposed Project activities include more specific actions with regard to these management principles, such as i) the stricter application of existing regulations to protect biodiversity in the marine and coastal zones, and ii) the preparation of strategies to prevent biodiversity impacts from fishing practices, to prevent the transfer of alien species from ballast water, and to prevent impacts from accidental spills of petroleum and chemical products.

The Project is designed to have a comprehensive regional approach, based on the concrete implementation of pilot plans for managing biodiversity in priority areas, with all activities to be sustained after Project completion.

1a. Replicability:

As described in the proceeding section on sustainability, all Project components are designed for continuation after Project completion which will facilitate replication. Replication of Project activities would take place both within the Gulf of Gabès region, within Tunisia and with dissemination of the Project results to Mediterranean and international stakeholders of the key lessons could be replicated at a much larger scale.

The first objective for replication would be implementation of the management plans for the next three pilot sites: Kerkennah Islands, Gabes Oasis and El Bibane lagoon. The Government is already forecasting resources to implement the management plans at these three sites. The second objective for replication would be to delineate additional sea grass areas within the Gulf of Gabès to be managed on the biodiversity principles and monitoring techniques piloted during the Project. The next objective for replication would be to delineate additional sea grass areas within the Gulf of Gabes to be managed on the biodiversity principles and monitoring techniques piloted during the Project. The next replication objectives would be at the Tunisian national scale to adapt the strategies to protect biodiversity in fishing techniques, ballast water management and prevention of petroleum and chemical spills. Also at the national scale, there would be replication of the participation mechanisms piloted and the scientific inventory and monitoring techniques piloted.

These replication goals are attainable, and are already part of the Project design as Project implementation will be carried out in large part by existing national experts and national institutions due to the capacity building activities of the Project. The enhanced baseline and monitoring data, as well as experiences gained from the piloting the methodologies for participatory management plans will allow an efficient replication can then be carried out by experienced professionals already working in Tunisia, at lower costs than the initial work. Furthermore the sustainable activities of the Project itself, will provide incentives to replicate successful activities elsewhere in Tunisia and the Mediterranean region.

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		

Formation of the Local Development Committees is facilitated by the regional authorities for each pilot site.	M	Component 2 is started very early in the Project
Staff appointed to the PMU have skills and full- time status to efficiently carry out their functions properly.	H	Appraisal of the Project includes a capacity assessment of the PMU and the implementing agency.
Equipment for the field studies, particularly in the marine environment is available	M	The terms of reference describe equipment requirements and acceptable alternatives.
Financial support by the GOT for the executing agency, and for long-term biodiversity monitoring.	M	The national level Management Committee coordinates with all Project related institutions and agencies on budget issues.
Procurement and procedures can be efficiently carried out by the implementing agency	M	Appraisal of the Project includes a procurement assessment to highlight areas for improvement
From Components to Outputs		
Availability of co-financing funds and financial management procedures are sufficiently compatible with World Bank procedures so as to not delay Project activities and disbursements.	M	Appraisal of the Project includes a financial management with highlighting areas for improvement.
Overall Risk Rating	M	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)

3. Possible Controversial Aspects:

No controversial aspects at this time

G. Main Conditions

1. Effectiveness Condition

2. Other [classify according to covenant types used in the Legal Agreements.]

H. Readiness for Implementation

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

Allan Rotman
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Country Manager/Director

Annex 1: Project Design Summary

TUNISIA: Tunisia: GEF: Gulf of Gabes Marine & Coastal Res. Prot.

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Sector-related CAS Goal:</p> <p>To enable better economic development based on the sustainable management of natural marine and coastal resources.</p>	<p>Sector Indicators:</p> <p>Successful biodiversity management approaches replicated in other areas within the Gulf of Gabes region with a resulting improvement in sustainable management.</p>	<p>Sector/ country reports:</p> <p>Biodiversity monitoring or evaluation reports.</p>	<p>(from Goal to Bank Mission)</p> <p>Macro-economic and political conditions remain favorable to maintain national budget allocations for biodiversity conservation and sustainable management of natural resources.</p>
<p>GEF Operational Program:</p> <p>Operational Program No.2: Coastal, Marine and Freshwater Ecosystems.</p>	<p>Outcome / Impact Indicators:</p> <p>Globally important biodiversity conserved and/or used in a sustainable manner (Trends for key species and habitats; Area of biodiversity habitats under special management).</p>	<p>Biodiversity monitoring or evaluation reports; Surveys using the protected area management effectiveness tool.</p>	
<p>Global Objective:</p> <p>a) to develop mechanisms for the integrated biodiversity management of the Gulf of Gabès at six (6) pilot sites and implement them on three (3) priority pilot sites; and</p> <p>b) to identify the long-term institutional and technical resources required to reverse the current trend of biodiversity degradation through involvement of the communities concerned within a framework of promoting sustainable participatory development.</p>	<p>Outcome / Impact Indicators:</p> <p>Management plans with substantive participatory inputs are prepared for 6 sites: Kerkennah Islands, Kneiss Islands, Gabes oasis, Gulf of Bou Ghrara, El Bibane lagoon and the sea grass pilot area. Management plans are implemented for 3 sites: the Kneiss Islands, Gulf of Bou Ghrara and the sea grass pilot area.</p> <p>Surveys using the protected area management effectiveness tool.</p> <p>One (1) long-term strategy is prepared: it describes the resources (i.e. human, financial, institutional and infrastructure) to manage biodiversity resources for the entire Gulf of Gabes region over the next 10-15 years.</p> <p>Increase in budget allocations and in numbers of trained staff for biodiversity management at the local level.</p>	<p>Project reports:</p> <p>Baseline and monitoring reports concerning the status of biodiversity in the pilot areas (density and diversity of species).</p> <p>Reports from the international workshops on integration of project results to be held at 18 month intervals.</p> <p>Annual budgets for participating agencies.</p> <p>Proposals for priority actions in the longer term in the Gulf of Gabès region are included in the 11th and</p>	<p>(from Objective to Goal)</p> <p>The Government continues to implement a policy of biodiversity protection and responsible management of natural resources.</p> <p>The Government continues to implement major investments to control urban and industrial pollution, most especially in terms of water quality for the Gulf of Gabes.</p> <p>The Government undertakes other poverty-reduction and development measures in regions around the pilot sites in order to disseminate project effects.</p>

		12th Plans. Socio-economic surveys concerning a sample of the target populations.	
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Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Output from each Component:</p> <p>Component 1: Strengthening of the institutional framework</p> <p>Result: An efficient project management structure is operational at local and regional levels, backed by a strengthened institutional framework to effectively manage marine and coastal biodiversity resources in the Gulf of Gabès.</p> <p>Component 2: Training, capacity-building and dissemination</p> <p>Result: Decision-makers at national and regional levels, government officials, local authorities, NGOs, target communities and other stakeholders receive training in biodiversity management, and participate actively in capacity-buiding workshops and dissemination of project results.</p>	<p>Output Indicators:</p> <p>The Management Committee, the Project Management Unit, and the Local Development Committees are operational at project initiation.</p> <p>80% of the equipment (computer equipment, vehicles, boats and other field equipment) is acquired by the end of Y1 and 100% by mid-Y2.</p> <p>Forecasting, monitoring and supervision of disbursements are deemed to be correct as from Y1.</p> <p>The Annual Activity Programs and Annual Activity Reports are deemed to be correct as from Y1.</p> <p>Survey using the protected area management effectiveness tool is initiated in Y1.</p> <p>A framework contract is signed with the CITET before mid-Y1.</p> <p>Preparation of training programs is finalized by the end of Y.</p> <p>Number of training sessions carried out and number of attendees.</p> <p>Preparation of the participatory approach program is finalized and validated at the end of Y1.</p> <p>Educational material to be used for the training and awareness program is ready by mid-Y2.</p> <p>Number of awareness campaigns and local stakeholders participating in project activities.</p> <p>The Information Exchange Service is operational by mid-Y1.</p> <p>The three information exchange and dissemination workshops take place at 18-month intervals. The first workshop to facilitate integration of initial findings for all</p>	<p>Project reports:</p> <p>Annual work programs; Monthly, quarterly and annual activity reports; Audits.</p> <p>Compliance with disbursement and payment forecasts.</p> <p>Requests for proposals for services and bid invitations for equipment issued.</p> <p>Annual activity reports.</p> <p>Evaluation reports for training and awareness sessions.</p> <p>Communication materials for radio and TV concerning and public awareness education material produced.</p> <p>Training agendas and training manuals.</p> <p>Annual statistics concerning the number of infringements of regulations observed and sanctioned in the Gulf of Gabès during years Y3 to Y5.</p>	<p>(from Outputs to Objective)</p> <p>Staff appointed to the PMU have sufficient skills and full-time status to efficiently carry out their functions properly.</p> <p>Tunisian and World Bank procurement procedures can be efficiently carried out by the implementing agency.</p> <p>Formation of the Local Development Committees is facilitated by the regional administrative authorities for each pilot site.</p>

<p>Component 3: Baseline data acquisition and applied biodiversity monitoring</p> <p>Result: Precise and up-to-date scientific, technical and social information concerning the Gulf of Gabès is acquired which enables development of management plans with precise indicators and quantified monitoring of effects on biodiversity sites.</p>	<p>project participants, with regional and international stakeholders is held by mid-Y2.</p> <p>All staff directly involved in the project have been trained by the end of Y2</p> <p>At least 2 awareness meetings have been held in each target community by the end of Y2.</p> <p>100% of the awareness and training budget has been committed by the end of Y4.</p> <p>All members of the Local Development Committees have been trained by the end of Y3.</p> <p>At least 20% of the members of the Development Committees are women.</p> <p>Authority officials are trained to ensure more effective application of biodiversity issues within existing regulations from mid-Y2 to the end of Y3.</p> <p>The second dissemination and integration workshop for all project participants, with regional and international stakeholders is held by mid-Y3.</p> <p>Establishment of new routine biodiversity and water quality inventory/ monitoring programs are completed by the end of Y3.</p> <p>Hydrodynamic and sedimentary studies are completed by the end of year Y3, enabling monitoring measures to be implemented in years Y4 and Y5.</p> <p>The water quality monitoring program for the Gulf of Gabès is started at the beginning of Y2.</p> <p>Posidonia sea grass beds are mapped at the end of Y3.</p> <p>Inventories of the density and distribution of key habitats (e.g sea grasses, keystone species and alien species) at the management sites are defined at the end of Y3 and variations are monitored by end of Y5.</p> <p>Socio-economic surveys are completed by the end of Y1.</p> <p>The study phase on the effects of</p>	<p>A framework contract with the INSTM is agreed, and the individual contract activities are defined in detailed terms of reference with budgets and time schedules.</p> <p>Technical reports relating to each activity study as defined in the terms of reference.</p> <p>Annual activity reports.</p> <p>Contracting agreements made with organizations, engineering companies, consultants and independent experts.</p>	<p>Equipment for the field studies, particularly in the marine environment is available from INSTM or can be easily leased/rented from private suppliers.</p>
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<p>Component 4: Participatory biodiversity management plans and mainstreaming of biodiversity protection</p> <p>Result: Six plans are prepared and three pilot plans are implemented for the integrated management of marine and coastal biodiversity at priority sites in the Gulf of Gabès, based on participatory principles that can be replicated at other points of the Tunisian and Mediterranean coasts.</p>	<p>the fishing fleet on biodiversity is completed by mid-Y3.</p> <p>The recommendations for changes to fishing practices to create a biodiversity protection through responsible fishing techniques are completed by the end of Y3, and can be used for monitoring during Y4 and Y5.</p> <p>The GIS is operational at the Information Exchange Service by mid-Y2 .</p> <p>Local NGOs and the target communities are involved in the plans, after receiving the awareness and training programs (see Component 2); preparation of 3 management plans is completed during Y2.</p> <p>Number of awareness campaigns and local stakeholders participating in project activities.</p> <p>Management plans for the Bou Ghrara, Kneiss Island and the sea grass pilot sites are operational in Y3.</p> <p>Construction of the visitor center at Bou Ghrara completed by mid-Y4.</p> <p>Reaching of a concession agreement for ecotourist management of Bou Ghrara.</p> <p>Construction of bird-watching structures on the Kneiss Islands completed by mid-Y4.</p> <p>Number of visitors to each managed site under implementation.</p> <p>Anti-trawling blocks and artificial reefs are installed in the sea grass pilot area covering 20-30 km sq.</p> <p>Number of active fishermen and revenues generated by fishing communities.</p> <p>Number of jobs and revenue amounts generated in eco-tourism sectors.</p> <p>The strategy to protect biodiversity areas from accidental petroleum</p>	<p>Project activity reports.</p> <p>Specific report on the participatory approach program.</p> <p>Approved draft management plan report.</p> <p>Monitoring of specific plan implementation indicators.</p> <p>Report on results of inventories of animal populations and plant diversity carried out in Y5.</p> <p>Records of enforcement of regulations, including number of infringements</p>	<p>Financial support by the Government of Tunisia for the executing agency, and for long-term biodiversity monitoring with the other government agencies associated with the project (e.g. INSTM, CITET, Coast Guard, etc).</p>
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and chemical spills is finalized by mid-Y2 and implemented by Y3.

The regional strategy to address alien species originating from ballast water validated by the Government of Tunisia by the end of Y3.

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Project Components / Sub-components:</p> <p>Activities of Component 1</p> <p>1.1. Project Management Unit (PMU) is set up, with purchase of equipment. Partner agencies agree on mandates and deliverables. The Steering Committee is set up at the national level.</p> <p>1.2. Quality assurance activity is staffed with specialized technical experts and meets regularly throughout the duration of the project.</p> <p>1.3. Long-term strategy activity holds dissemination and synthesis workshops; this activity defines the biodiversity management priorities to be included in the next 5-year plans.</p> <p>1.4 GIS and Information Exchange Center.</p> <p>1.5 Strategic Environmental Evaluation (SEE) is applied to the Tourist Development Plan for the Gulf of Gabès.</p> <p>1.6 Strategy to protect biodiversity areas from accidental petroleum and chemical spills is prepared and discussed for the Gulf of Gabes.</p>	<p>Inputs: (budget for each component)</p> <p>Total US\$: 3,01 million</p>	<p>Project reports:</p> <p>5-year budget forecast plan (updated annually).</p> <p>Annual plan of activities of the Project Management Unit (PMU).</p> <p>Financial reports; Audits; Minutes of meetings.</p>	<p>(from Components to Outputs)</p> <p>Availability of co-financing funds and internal Tunisian financial management procedures are sufficiently compatible with World Bank procedures so as to not delay project activities and disbursements.</p>
<p>Activities of Component 2</p> <p>2.1. Training program for technical and project management skills based on Mediterranean and international experiences for the staff (project staff and high-level management level staff).</p> <p>2.2. Public awareness program for target communities, local communities, concerned interest groups and all other stakeholders - prepared and implemented.</p> <p>2.3. Capacity building to strengthen enforcement of biodiversity protection in regulations - prepared and</p>	<p>Total US\$: 1,29 million</p>	<p>PMU activities reports; Terms of Reference</p> <p>Activity monitoring; documents relating to training modules; educational material produced, dissemination workshop proceedings.</p>	<p>Scientific experts are willing to disseminate results in a phased manner.</p>

<p>implemented.</p> <p>2.4. Socio-economic surveys of target populations and other stakeholders.</p> <p>2.5 Participatory tools and mechanisms - prepared and integrated into preparation of management plans.</p>			
<p>Activities of Component 3</p>	<p>Total US\$: 1,76 million</p>		
<p>3.1. Hydrodynamic and water quality studies are undertaken for the Gulf and Jerba-Zarzis area.</p>		<p>PMU activities reports; Terms of Reference</p>	<p>Scientific experts are able to adapt appropriate inventory and monitoring techniques to the project objectives</p>
<p>3.2. Baseline inventories of terrestrial fauna and flora are carried out in the sectors chosen for Management Plans.</p>		<p>Invitations to tender; Activity monitoring; Acceptance of technical reports</p>	
<p>3.3. Baseline inventory and mapping of the most significant Posidonia sea grass beds and marine plant cover in the Gulf of Gabès.</p>			
<p>3.4. Monitoring network for Posidonia sea grass of the most significant formations - monitoring procedures established and implementation.</p>			
<p>3.5. Inventory and monitoring of lagoon and marine species with regional and international significance.</p>			
<p>3.6. Inventory and monitoring of alien species and their distribution within the Gulf of Gabes.</p>			
<p>3.7 Regional ballast water management strategy to address alien species is prepared for the Gulf of Gabès.</p>			
<p>3.8. Identification of biodiversity impacts caused by the fishing fleet, monitoring of impacts within and adjacent to sea grass pilot area, and recommended changes to fishing practices.</p>			
<p>Activities of Component 4</p>	<p>Total US\$ 2,74 million</p>		
		<p>PMU activities reports; Terms of</p>	

<p>4.1. Suitable site for the sea grass pilot area is delineated; and anti-trawling structures are built and the management plan is detailed.</p> <p>4.2. A generic methodology for a biodiversity management plan is prepared and validated.</p> <p>4.3. Preparation and implementation of the management plan for the Guld of Bou Ghrara.</p> <p>4.4. Preparation and implementation of the management plan for the Kneiss Islands.</p> <p>4.5. Preparation and implementation of the management plan for the sea grass area</p> <p>4.6 Preparation of the management plan for the Lagoon (Bahiret) El Bibane.</p> <p>4.7. Preparation of the management plan for the Kerkennah Islands.</p> <p>4.8. Preparation of the management plan for the Gabès Oasis.</p> <p>4.9. A pilot Strategic Environmental Evaluation (SEE) is applied to the Tourist Development Plan for the Gulf of Gabès.</p> <p>4.10. Strategy to protect biodiversity areas from accidental petroleum and chemical spills is prepared and discussed for the Gulf of Gabes.</p>	<p>Reference</p> <p>Invitations to tender; Activity monitoring; Acceptance of works</p> <p>Invitations to tender; Contract monitoring; Acceptance of works</p> <p>Printing of technical reports</p>	<p>Commitment by all key stakeholders to effectively participate in the implementation of the management plans for the three priority pilot sites : Gulf of Bou Ghrara, Kneiss Islands and the sea grass pilot area.</p>
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Annex 2: Detailed Project Description

TUNISIA: Tunisia: GEF: Gulf of Gabès Marine & Coastal Res. Prot.

The Project consists of four main components. The cost of implementing this project is estimated at *US\$ 8.80 million* of which *US\$ 6.06 million* would be funded by the GEF.

By Component:

Project Component 1 : Institutional strengthening, strategic planning and dissemination. - US\$3.01 million

The main activities for this component are:

(1) Project Management Unit, to be staffed by eight key full-time permanent employees from the Tunisian civil service; included in this activity is office equipment, equipment for the Information Exchange Center (e.g. Geographic Information System (GIS), map printers, digitizing platforms), basic field equipment (e.g. boat, motor, vehicles) and operating costs;

(2) Quality assurance and control for the project activities (i.e. scientific, technical and participatory planning activities); this quality assurance will be provided by short term technical assistance experts, and includes workshops to disseminate the interim and final results of activities;

(3) Long-term strategy for biodiversity conservation for the Gulf of Gabès region; this activity includes two synthesis workshops to disseminate the project results to scientific and technical groups at the within the Project and at the national, Mediterranean and international levels; this activity will incorporate lessons learned from other GEF projects and will include mechanisms for the replication of the Project activities;

(4) Geographical Information System (GIS) to serve as a data base for the Information Exchange Center which is functionally linked to the PMU; this activity will gather all existing technical, scientific and social information concerning the Gulf of Gabès, set up user friendly filing (archiving) system and maintain regular updates on Project activities, as well as coordinate with existing information services (e.g. Observatoires) of Ministries in Tunisia;

(5) Strategic Environmental Evaluation (SEE) to evaluate impacts on biodiversity of the mid-to-long term Tourist Development Plan for the Gulf of Gabès; and

(6) Strategy to protect biodiversity areas from accidental petroleum and chemical spills.

A detailed description of all Project activities has already been prepared during Project preparation. Each activity is described in the format of a terms of reference, with clear objectives, task descriptions, methodology and outputs. These terms of reference will be incorporated into an operations manual which will allow the PMU to quickly launch all the critical project activities within the first year of implementation. In addition during early implementation training will be provided to the PMU staff for both technical skills (e.g. preparation of participatory management plans; operational plans) and for project management skills to build implementation effectiveness.

Project Component 2 : Training and capacity-building. - US\$1.29 million

The aim of this component is to strengthen human resources for technical, scientific and participation issues for biodiversity management in the Gulf of Gabès region. The component will consist of:

- (1) Training for all Project staff (both part-time and full-time) as well as for high level management staff on Mediterranean and international experience in marine and coastal biodiversity management, and in project management skills (e.g. financial management, procurement, progress monitoring, impact monitoring, etc); this activity will combine both classroom training and on-the-job training to ensure an efficient Project launch and an efficient implementation; the goal is to ensure a strong team approach across the various Tunisian institutions to enhance the Project objectives;
- (2) Public awareness program for the target communities, local stakeholder groups and the general public concerned by the Project; this activity will include experience from the other on-going GEF projects in Tunisia;
- (3) Capacity building program to strengthen enforcement of biodiversity protection in marine and coastal regulations; this activity is targeted at the staff from the agencies working in day-to-day enforcement of existing regulations for sectors such as fisheries, solid waste, small and large ports, customs, coastal and wetlands protection, international treaties, etc.
- (4) Socio-economic surveys of the target populations and other stakeholder groups; and
- (5) Participatory tools and mechanisms: this activity will identify and prepare implementation mechanisms to incorporate participation into the biodiversity management plans.

Project Component 3 : Baseline data acquisition and applied biodiversity monitoring. - US\$ 1.76 million

The aim of this component is to update or acquire technical and scientific data required as basic inputs for the biodiversity management plans (see Component 4 below), and then to carry out monitoring of key impact indicators. The activities of this component include the following studies and inventories:

- (1) Hydrodynamic and water quality studies for the Gulf of Gabès in general, but focussed on the Jerba-Zarzis area in particular;
- (2) Inventories of terrestrial flora and fauna at the 6 priority sites so as to prepare detailed baseline data for the management plans;
- (3) Inventory and mapping of the marine plant cover, including *Posidonia* sea grass beds, to follow-up on the gaps and intensity of sampling from existing baseline data;
- (4) Monitoring network for sea grass beds in parallel with implementation of the management plans;
- (5) Inventory and monitoring of marine and lagoon species of regional and global interest; this will be carried out in parallel with the implementation of the management plans;
- (6) Inventory and monitoring of alien species and their distribution within the Gulf;
- (7) Regional management strategy ballast water to address alien species; and
- (8) Biodiversity impacts caused by the fishing fleet, including monitoring of impacts within and adjacent to the sea grass areas and recommended changes to fishing practices.

Project Component 4: Participatory Biodiversity Management Plans. - US\$2.74 million

The main aim of this component is to prepare sustainable biodiversity management plans for the six pilot

areas, and implement the plans for the chosen three priority areas. All the plans will be prepared based on a participatory approach. This component includes:

- (1) General methodology for the participatory biodiversity management plans, for implementation within the existing Tunisian legal framework;
- (2) Implementation of the biodiversity management plan for the sea grass area; the experimental area for immediate implementation is located in the close vicinity of the Kerkennah Islands; the installation of anti-trawling structures and artificial reefs is included in the experimental and full-scale implementation of this activity;
- (3) Implementation of the biodiversity management plan for the Gulf of Bou Ghrara; this activity includes the construction of a visitors center;
- (4) Implementation of the biodiversity management plan for the Kneiss Islands; this activity includes the construction of bird observation platforms;
- (5) Preparation (only) of a biodiversity management plan for the El Bibane lagoon;
- (6) preparation (only) of a biodiversity management plan the Kerkennah Islands; and
- (7) Preparation (only) of a biodiversity management plan for the Gabès Oasis.

The preparation of the management plans for the Kerkennah Islands, El Bibane lagoon, and Gabès Oasis, will be based on lessons learned from the first three management sites. The implementation of these latter three management plans will be financed by the Government, and already measures are underway to assure financing mechanisms.

Additional GEF Annex 3: Incremental Cost Analysis
TUNISIA: Tunisia: GEF: Gulf of Gabes Marine & Coastal Res. Prot.

Background

The coastal zone of Tunisia is extremely rich in terms of species and habitats, and this is particularly true of the Gulf of Gabès region. However for several decades this region has experienced three major direct threats to biodiversity:

- industrial pollution, and especially the discharge of phospho-gypsum effluents into the Gulf,
- fisheries over-exploitation, particularly the use of fishing equipment that impacts sea grass beds and a general decline of harvests for near-shore fisheries,
- urban and tourism development; although this is a high value economic benefit for the country, the development of infrastructure along the coast has already upset the fragile balance of this zone.

The Tunisian Government has already made enormous financial efforts to reduce urban and industrial sources of pollution to a reasonable level. The fact that nearly 80% of the population in the three Governorates in the project area is concentrated along the coastal strip indicates that even greater pressure will be brought to bear on natural resources in the future.

Conflicts of use between users are likely to grow in the near future due to the progressive shrinking of usable resources. This may exacerbate the falling incomes of the coastal population who rely on marine resources for their livelihoods. Thus, sites of exceptional biodiversity that are still barely affected today could quickly be degraded in the coming years.

The aim of this project is to address the indirect biodiversity threats by setting up sustainable management methods for marine and coastal resources. The goal of the management plan is to introduce methods in pilot areas that protect global biodiversity, and at the same time contribute to the incomes of local people.

Baseline Scenario

Within the 10th National Plan of Tunisia for Economic and Social Development (2002-2006), the major environmental protection investments are categorized within municipal infrastructure. The overall investment plan is US\$ 36.3 billion, as summarized below:

Total Investment under the 10th National Plan (2002-2006):

(Amounts in millions US\$)

<i>Sector</i>	<i>Amount</i>	<i>Proportion</i>
Agriculture and fisheries	3 731	10.3%
Manufacturing industries	5 304	14.6%
Non-manufacturing industries	4 465	12.3%
Services	18 985	52.3%
Municipal infrastructure	3 823	10.5%
Total	36 308	100.0%

Source: 10th Plan for Economic and Social Development

The investment planned for the environmental protection sector amounts to US\$2.1 billion. This represents 5.5 % of the overall investments under the 10th Plan or 56.5 % of the budgets allocated to the municipal infrastructure sector. The breakdown of investments for environmental protection described by type of investment project is presented in the following table:

Breakdown of environmental protection investments - 10th Plan:

(Amounts in millions US\$)

	Committed Old Projects (Note 1)		New Projects (Note 2)		Total	
	<i>Amount</i>	<i>Proportion</i>	<i>Amount</i>	<i>Proportion</i>	<i>Amount</i>	<i>Proportion</i>
Wastewater collection and treatment	355.9.	43.6%	460.4.	56.4%	816.3.	39.8%
Municipal environmental protection	20.1.	14.8%	116.1.	85.2%	136.3.	6.6%
Solid waste disposal in sanitary landfills	75.5.	51.0%	72.7.	49.1%	148.1.	7.2%
Urban environment and city beautification	6.2.	10.8%	51.6.	89.2%	57.8.	2.8%
Industrial pollution control	61.6.	30.7%	139.2.	69.3%	200.7	9.8%
Protection of coastal and marine areas	39.8.	25.0%	119.5.	75.0%	159.3.	7.8%
Protection of natural habitats and rural zones	10.4.	29.4%	25.1.	70.6%	35.6.	1.7%
Environmental inspection and enforcement	2.5.	12.6%	17.5.	87.4%	20.0.	1.0%
Training, public awareness and research	5.8.	10.1%	51.3.	89.9%	57.0.	2.8%
Renewable energy	77.8.	18.5%	343.0.	81.5%	420.7.	20.5%
Total	655.6.	31.9%	1 396.3.	68.1%	2 051.9.	100.0%

Source: 10th Plan for Economic and Social Development (third phase), Report of the Sector Commission for Land Use Planning and Environmental Protection, Ministry of the Environment and Land Use Planning, September 2001.

Note 1: Committed Old Projects: Projects identified and/or started during the 9th Plan and continued during the 10th Plan.

Note 2: New Projects: Projects in the 10th Plan

The new projects included under the 10th Plan in the Sector for coastal zone and marine protection are the following:

New projects for coastal and marine protection - 10th Plan:

(Amounts in million os US\$)

		<i>Total Cost</i>	<i>10th Plan</i>
		US\$ million	US\$ million
APAL	National program for protection against coastal erosion	50.1	19.8
APAL	Coastal Observatory (public information dissemination center)	1.1	1.1
APAL	Protection of sensitive ecological areas in coastal zones	22.7	17.5
APAL	Coastal promenades	2.1	2.1
APAL	Rehabilitation of coastal lakes and salt marshes	312.0	75.0
APAL	Biodiversity	3.8	2.5
INSTM	Protection of sensitive ecological areas in coastal zones	1.5	1.5
Total		393.3	119.5

Source: 10th Plan for Economic and Social Development (third phase), Report of the Sector Commission for Land Use Planning and Environmental Protection, Ministry of the Environment and Land Use Planning, September 2001.

This Project will act as a catalyst for all levels of decision-makers to invest in additional incremental activities for biodiversity protection. The 6 management sites will demonstrate that the management of biodiversity can be sustainable and contribute to long-term revenues for the communities concerned. The project is organized around four (4) components:

- Institutional strengthening, strategic planning and dissemination
- Training and capacity-building
- Baseline data acquisition and applied biodiversity monitoring
- Participatory biodiversity management plans

The baseline scenario contains all the Government's activities and programs in the sectors of environmental protection and management for the Gulf of Gabès region. The following table presents the different activities planned or currently in implementation based on meeting two criteria:

- (i) activities located in the project area, and
- (ii) activities linked to the four project components or having a component in common with one of the relevant activities described above.

The baseline scenario is estimated at US\$ 279 million with a breakdown related to each project component as summarized below:

Summary of the Baseline Scenario:

Project Component:	<i>1000 DT</i>	<i>1000 \$US</i>	<i>Proportion</i>
1: Institutional strengthening, strategic planning and dissemination	54 632	40 468	14.5%
2: Training and capacity-building	54 652	40 483	14.5%
3: Baseline data acquisition and applied biodiversity monitoring	109 200	80 889	29.0%
4: Participatory Biodiversity Management Plans	158 000	117 037	42.0%
Total	376 483	278 876	100.0%

Baseline Scenario: Breakdown by Governorate and by Activity ('000 DT and '000US\$)

Governorate		Total Cost		Source
Component:	Activities	1000 DT	1000 \$ US	
Sfax				
4	Coastline protection of Kerkennah against erosion	300	222	Regional preparation report for the 10 th Plan
3	Management of the sensitive zone of Kneiss Islands	87	222	APAL, project information form
4	Rehabilitation of the southern coastal shoreline	50	64	Regional preparation report for the 10 th Plan
3	Master land use plan for management of the northern coastal zone	80	37	Regional preparation report for the 10 th Plan
3	Site relocation study for phospho-gypsum industrial plants	50	59	Regional preparation report for the 10 th Plan
3	Management plan for the adjacent urban zone of Sfax	50	37	Regional preparation report for the 10 th Plan
3	Phyto-ecological maps	10	37	Regional preparation report for the 10 th Plan
3	Regional Agenda 21	50	7	Regional preparation report for the 10 th Plan
3	Agenda 21 for-Kerkennah)	50	37	Regional preparation report for the 10 th Plan
0	Sanitary landfills	6 000	37	Regional preparation report for the 10 th Plan
0	Solid waste treatment center	2 000	4 444	Regional preparation report for the 10 th Plan
0	Taparura project (de-pollution or clean-up component)	80 000	1 481	MAERH, Direction for de-pollution industrielle
0	Wastewater collection and treatment projects	52 000	59 259	MDCI
Total Governorate of Sfax		140727	104 242	
Gabès				
4	Project for the ecologically sensitive area for the oasis of Gabès	11 600	8 593	Regional preparation report for the 10 th Plan
0	Wastewater collection and treatment projects	28 200	20 889	Regional preparation report for the 10 th Plan
0	Protection of the coastal zone and municipalities	12 000	8 889	Regional preparation report for the 10 th Plan
0	Project for de-pollution of the phospho-gypsum plant at Gabès	120 000	88 889	MAERH, Direction for de-pollution industrielle
Total Governorate of Gabès		171 800	127 259	Regional preparation report for the 10 th Plan
Médenine				
4	Ecologically sensitive areas of Beïn Widen and Ras Rmal	1 380	1 022	Regional preparation report for the 10 th Plan
4	Protection of the East coastline of Djerba	586	434	Regional preparation report for the 10 th Plan
3	Agenda 21 - Djerba Médenine	20	15	Regional preparation report for the 10 th Plan
3	Photo-ecological maps for coastal zones	50	37	Regional preparation report for the 10 th Plan
3	Protected areas in wetland areas (Sabakh El Jalabia, El Mjesser and Wadi El Khajel)	20	15	Regional preparation report for the 10 th Plan
3	Protected areas (Beni Khadech and Zarzis)	20	15	Regional preparation report for the 10 th Plan
3	Study on desertification in Bou Ghrara region	20	15	Regional preparation report for the 10 th Plan
0	Wastewater collection and treatment projects	35 610	26 378	Regional preparation report for the 10 th Plan
0	Controlled landfill for Djerba and 2 collection centers	5 000	3 704	Regional preparation report for the 10 th Plan
0	Controlled landfill for Médenine and 1 collection center	3 000	2 222	Regional preparation report for the 10 th Plan
0	Protection of the coastal shoreline for North-East Djerba	11 000	8 148	Regional preparation report for the 10 th Plan
0	Protection of Aghir against coastal erosion	5 400	4 000	APAL, project information form
Total Governorate of Médenine		62 106	46 004	
Regional Activities for Several Governorates				
Base budget for Institutional strengthening of the public services in three governorates				
1		600	444	Estimate on basis of national data
2	Training and public awareness for biodiversity	620	459	CITET Program (5% of training budget)
3	Inventory of pollution sources on the coast	130	96	APAL, project information form
3	Study of terrestrial vegetation cover	200	148	Regional preparation report for the 10 th Plan
3	Studies on coastal and marine issues	300	222	Regional preparation report for the 10 th Plan
Total of Regional Activities		1850	1370	
Total				
<i>Before distribution of the regional activities</i>				
Component 0 (regional activities component)		360 210	266 822	
Component 1		600	444	
Component 2		620	459	
Component 3		1 137	842	
Component 4		13 916	10 308	
Total		376 483	278 876	
<i>After distribution of the regional activities</i>				
Component 1		54 632	40 468	
Component 2		54 652	40 483	
Component 3		109 200	80 889	
Component 4		158 000	117 037	
Total		376 483	278 876	

GEF Scenario

The alternative proposed for GEF funding is based on and developed from this baseline scenario. The GEF scenario involves the sustainable development protection and management of 6 pilot sites that are unique in the Mediterranean in terms of the habitats and species. This will improve scientific knowledge of the Gulf of Gabès, increasing scientific knowledge to improve management and monitoring of ecosystem health. It will also involve the setting up of a management and documentation center that will provide essential information for understanding the biodiversity environment and management measures necessary to ensure sustainable development of the coastal ecosystem environment. By mapping and monitoring critical ecosystems and species (e.g. seagrass inventories, mapping and monitoring), the Project will provide essential information on ecosystem health and identify management of interventions necessary to ensure sustainable development in the coastal zone. This project will pilot ways to mainstream biodiversity issues into development sectors (e.g. tourism) in which the Government invests heavily but for which sustainability benefits are still largely unknown.

Throughout the Project area and at all levels ranging from small coastal communities to large Government institutions, the GEF scenario involves specific training and awareness activities aimed at improving the conservation and sustainable use of biodiversity. The GEF will increase collective awareness of the need for and benefits from biodiversity protection and instill in stakeholders a more responsible attitude, which is a prerequisite for sustainable management of the natural environment.

The total cost of the GEF scenario is estimated at US\$ 287.7 million, as set out in the table below. The difference between this baseline scenario (US\$ 278.9 million) and the GEF scenario represents the additional cost of the project, i.e. US\$ 8.8 million.

The Government would co-finance part of the additional cost (US\$ 2.74 million), and is thus requesting a GEF grant of (US\$6.06million).

Summary of Incremental Costs

<i>Component</i>	<i>Category</i>	<i>Expenditure</i>	<i>Benefits</i>
1. Strengthening of the institutional framework	Baseline scenario	40 468	See previous table
	GEF scenario	43 481	Creation of a sustainable organization, the main task of which is to preserve biodiversity in the region of the Gulf of Gabès.
	Additional Cost	3 013	
2. Training, capacity-building and dissemination	Baseline scenario	40 483	See previous table
	GEF scenario	41 772	Capacity-building for biodiversity management at national, regional, local and community levels.
	Additional Cost	1 289	
3. Baseline data acquisition and applied biodiversity monitoring	Baseline scenario	80 889	See previous table
	GEF scenario	82 646	Precise, up-to-date scientific knowledge of the Gulf of Gabès, enabling effective monitoring of effects produced by the project and better targeting of objectives.
	Additional Cost	1 757	
4. Biodiversity management plans and mainstreaming of biodiversity protection.	Baseline scenario	117 037	See previous table
	GEF scenario	96 813	Preservation and saving of natural marine and coastal resources in sensitive areas of the Gulf of Gabès, based on participatory principles that are capable of replication at other points along the Tunisian and Mediterranean coasts.
	Additional Cost	2 741	
Grand Total	Baseline scenario	278 876	
	GEF scenario	287 676	
	Total Additional Cost	8 800	

**Additional GEF Annex 4: Response to STAP Roster Technical Review and
Response to GEF Secretariat Comments
TUNISIA: Tunisia: GEF: Gulf of Gabes Marine & Coastal Res. Prot.**

**STAP Review: Protection of the Marine and Coastal Resources of the Gulf of Gabés, Tunisia
Summary**

Overall the project is well prepared and the documentation is well written. There are some weaknesses that can be addressed through modest revision of the project documentation. One of the main points that need further clarification is the role of the private sector as a "stakeholder" and the contribution that this sector could make to the conservation of the ecosystems and renewable resource features of the coastal environment. Specific points concerning this issue and other areas where the project documentation could be strengthened are set out below based on the GEF standard structure for assessing proposals.

**STAP Reviewer
Dr. Peter Raymond Burbridge
Professor Emertus, Scholl of Marine Science and Technology
University of Newcastle, UK**

Scientific and technical soundness of the project

There is strong evidence of careful scientific assessment of the underlying problems associated with the conservation of the biological diversity of the Tunisian coast and specific target locations. The main threats to the coastal ecosystem and individual habitats have been assessed. There is sufficient ecological and technical information available to give the project a sound scientific base. Some important questions remain that will affect the design of project activities designed to conserve biodiversity, such as the actual causes of the decline of the Posidonia seagrass beds, that require further study. Appropriate studies are built into the project design and measures are planned to make effective use of the scientific information obtained in revising the initial proposals for improved ecosystem management.

Appropriate indicators have been identified to achieve the objectives and appropriate monitoring schemes have been incorporated into the design.

The participative approach taken in the project proposal should achieve the objectives of conserving biodiversity. The design recognises the importance of developing both awareness of conservation issues and active participation of communities and other local stakeholders in the development of effective biodiversity conservation initiatives. However there are specific issues that need to be clarified concerning the role of the tourism industry in the development and implementation of the biodiversity management strategies, plans and management measures for specific locations. Brief mention is made of the "private sector", however the active participation of important stakeholders, such as hotel operators and other tourism related interests needs to be given a higher profile in the project design. Experience elsewhere has demonstrated the importance of getting the active involvement and support of the private sector in biodiversity conservation. Tourism development groups and hotel operators are identified in the background documents as key drivers of coastal habitat change, it is therefore very important to ensure their interests and potential capacities to support biodiversity conservation are incorporated. If this is not done, there is scope for resistance to and even blocking of proposals by private sector bodies that

believe their interests are not being given the attention they deserve.

The active participation of fishers also needs to be given more prominence in the project design. Given that inappropriate and illegal fishing practices are identified as major contributing factors in the damage to habitats and decline in the populations of commercially valuable species, it seems inappropriate to wait until late in the project cycle to look further at the analysis of such practices (see logframe, component 3).

The project design is also biased towards a "top-down" approach. This may be justified in respect to the measures that the Government is instituting to control pollution and to develop institutional arrangements that give more emphasis to coastal management and conservation of biological diversity. However, the apparent weakness in the project design in respect to the under-emphasis on the role of the private sector and other interests that are active outside government agencies could lead to a risk of weak support for policies, plans and management interventions. The success of the proposed approach also depends heavily upon the effective cooperation of line agencies. Lack of cooperation and coordination among government agencies is a common problem in the management of coastal and marine areas and resources throughout the world. The measures to promote stronger cooperation among agencies could be further clarified and even reinforced in respect to how cooperation and coordination will be developed and reinforced. Consideration could also be given to developing a sense of partnership between the government agencies and the private sector and other stakeholders in supporting the development of the project. This would help reduce the risk of poor coordination among agencies and would help to strengthen the sustainability of the project outcomes.

There do not appear to be any controversial aspects about the project.

The project does not introduce incentives that may lead to over-harvesting of resources and contains measures designed to improve conservation of habitats and the sustainable use of renewable resources.

It is not clear how any drops in revenue in the fisheries sector or the tourism sector resulting from any conservation measures proposed might be dealt with/compensated for. This element of the project design could be further clarified.

The legal instrument aspects in respect to international conventions, treaties and protocols are clearly spelt out in the background documentation and project concept. The project addresses weaknesses in the enforcement of existing national laws and regulations, and the measures proposed would help to ensure better use of these legal instruments.

The model of sustainable use outlined in the project will be tested and amended where appropriate and there are plans to use pilot management studies as a means of learning from and replicating the management model in other locations.

The proposed model has good prospects of success in the local pilot test areas. The success will depend heavily on support from stakeholders and the measures designed to improve cooperation and coordination among government agencies. These issues are addressed in the project design and the comments above suggest areas in which the design could be strengthened.

There is evidence that the project encompasses well thought through technical and socio-economic measures that should help the Government of Tunisia to develop long-term and sustainable solutions to the issues adversely affecting biological diversity.

Identification of global environmental benefits

Section 2.2 of the Project Concept directly addresses the goals of the GEF Operational Programme no. 2 and the recommendations of the Conference of parties of the Convention on Biological Diversity for the conservation and sustainable use of biological resources in coastal and marine ecosystems. The Project design aims to strengthen measures to reduce the impact of coastal development and over-exploitation of natural resources being implemented by the Government of Tunisia.

The global benefits for the conservation of biodiversity as interpreted by the COP of the CBD that will result from the planned interventions are primarily related to the improved management unique Mediterranean ecosystems which are becoming increasingly threatened by development, are rare, or are only found in Tunisian waters. The planned interventions should have a beneficial impact in terms of the importance of these ecosystems within the Mediterranean and specific species of global importance.

The project therefore fits well within the context of the global goals of GEF

Regional Context

The project addresses issues of importance to biological diversity conservation within the Mediterranean region by focussing on sites that are of representative of other parts of the region, or are unique to Tunisia but contribute to the overall biodiversity of the Mediterranean. The potential transboundary aspects of the proposed interventions could be more clearly set out in the project concept and design. For example, improving the conservation of the osideonia sea grass beds and beach systems in Tunisia may well help in the conservation of the marine turtle population of the region. It would be helpful if the project design incorporated measures to examine the potential for establishing management links with other countries where there may be a transboundary effect and the measures adopted in Tunisia could be extended to the wider region. Conversely, it would be beneficial to explore ways in which improved management in other countries could enhance/add value to the effect of the biological diversity conservation measures proposed for Tunisia.

Replicability of the project

There is good scope for the replication of the planned activities in other parts of Tunisia and potentially in other parts of the Mediterranean based on the experience gained and lessons learned during the life of the project. In this context, it would be useful to give more emphasis to the exchange of information and experience gained through the project with other countries in the region. Perhaps the UNEP/UNDP supported Mediterranean Action Plan may offer a vehicle for broader communication and sharing of results

Sustainability of the project

There appears to be good potential for continuation of the changes the project aims as the project design incorporates measures for both local participation and for human resources development and institutional strengthening which complement the Government's policies and management priorities.

Secondary issues

Linkage to other focal areas

The project design appears to be consistent with the stated operational strategies of the other focal areas and avoids negative impacts in focal areas outside the focus of the project. The proposed project activities appear feasible and cost-effective, and should contribute to global environmental benefits in other focal areas and in the cross-sectoral area of land degradation.

For example, the project addresses terrestrial land degradation and nearshore marine water quality issues in a manner that complements the Government's investment in industrial and urban wastewater treatment. Improved management of tourism and recreation development in the coastal zone and proposed actions to reduce the impact of inappropriate fishing activities all complement the actions of the Government and add value to those actions in improving conditions for aquatic biodiversity conservation.

Linkage to other programmes and action plans at the regional or subregional level

The project seeks to build upon past, ongoing and prospective GEF activities. The project design could be strengthened by making more explicit mention of how the planned activities would be coordinated with work of other GEF projects and their respective Implementing Agencies and other bodies. This should include how links would be established with relevant ongoing regional or sub-regional programs and action plans.

Other beneficial environmental effects

The project seeks to improve the management of coastal and marine ecosystems of importance to more than one sector of the Tunisian economy. The planned measure should help reduce conflicts among agencies and economic entities seeking to maximise their respective use of the coastal and marine resources base. Improved management of protected areas may also yield other ecosystem services to the region and to local communities.

The project does give some emphasis to the development of eco-tourism. However, the potential negative impacts that may result from eco-tourism could be given greater recognition in the project design.

Degree of involvement of stakeholders in the project

Stakeholder involvement is incorporated as part of the "participative" nature of the planned activities. This addresses GEF emphasis on the development of activities to promote community-based management of biodiversity. Giving greater emphasis to the role of the private sector, specifically tourism, recreation, could strengthen the project design and commercial fisheries as mentioned above. The project could also elaborate on the use of concepts such as the co-management of resources, or contracts or negotiations with governments that define each stakeholders responsibility in managing the resource, and the eventual devolution of biodiversity management measure to local groups and NGOs.

Capacity building aspects

The project design does give a clear exposition of measures to strengthen awareness and basic expertise to support biological diversity conservation. However, the project design would benefit from further clarification of the measures to promote and maintain cooperation between the various groups of stakeholders, and transparent mechanisms to ensure the active participation of relevant stakeholders in the development, implementation and monitoring of project activities.

RESPONSE TO STAP REVIEWER COMMENTS

The Project team appreciates the work of the STAP reviewer and is pleased with the positive response to the Project design. The Project will still go through an appraisal process involving discussions with the Tunisian authorities before final Project submission to GEF and the Bank Board. Some specific comments provided by the STAP reviewer are addressed below.

Comment: Some important questions remain that will affect the design of Project activities designed to conserve biodiversity, such as the actual causes of the decline of the *Posidonia* seagrass beds, that require further study.

Response: Agree. Despite the fact that the *Posidonia* meadows are very productive ecosystems and that the seagrass beds in the Gulf of Gabès are considered as the most extensive in the Mediterranean, data on the historic coverage is limited, as well as data on the extent of and major causes for degradation. Inventories and mapping of the *Posidonia* meadows are part of the Project activities and are necessary for the development of any conservation measures.

Comment: There are specific issues that need to be clarified concerning the role of the tourism industry in the development and implementation of the biodiversity management strategies, plans and management measures for specific locations. Brief mention is made of the "private sector", however the active participation of important stakeholders, such as hotel operators and other tourism related interests needs to be given a higher profile in the Project design.

Response: We agree that the active participation and support from stakeholder groups are key to successful Project implementation. The tourist sector is a major cash earner in the local economy. On one hand development of the sector is a major contributor to the degradation of coastal areas, but on the other hand it is based on the beauty and resources of the coast and could become an important player in biodiversity conservation. The participation mechanisms to better integrate tourism stakeholders will be addressed by an additional social study now underway, with emphasis on tourism stakeholders in the Bou Ghrara region. This will be finished shortly and integrated into PAD document.

Comment: The active participation of fishermen also needs to be given more prominence in the Project design.

Response: We agree that the participation of fishermen is essential since the sector is a major contributor to the degradation of the marine environment by destructive fishing methods, as well as to decrease marine productivity. The involvement of fishermen in the development and enforcement of management measures to protect the fisheries resources is essential, but not always easy to accomplish. The additional social study mentioned above will also include fishing sector stakeholders.

Comment: The Project design is biased towards a "top-down" approach.

Response: The Project tries to involve a wide range of governmental agencies at national and local levels, and fit into the existing governmental structure. However, the participatory approach is a key element in the development of biodiversity management plans and capacity building activities. The additional social study which is underway would further address the participation of other stakeholder groups, and draw upon lessons from preceding GEF Projects.

Comment: It is not clear how any drops in revenue in the fisheries sector or the tourism sector resulting from any conservation measures proposed might be dealt with/compensated for.

Response: This is an important issue. By involving the stakeholders from the beginning in the

development of any resource management plans and measures, it is expected that they would realize that the Project objective is a sustainable use of the resources which would benefit themselves. However conservation measures, such as restricted fishing zones, can of course cause conflicts which will be addressed in conjunction with World Bank social safeguard policy on this issue. (Bank Operational Policy 4:12 : Involuntary Resettlement).

Comment: It would be useful to give more emphasis to the exchange of information and experience gained through the Project with other countries in the region.

Response: The conservation methods and measures developed for these marine and coastal protected areas will be useful for other proposed marine protected areas in the region. Extensive dissemination activities are planned as part of the Project, including a documentation center, GIS system and international and regional workshops.

Comment: The Project design could be strengthened by making more explicit mention of how the planned activities would be coordinated with work of other GEF Projects and their respective Implementing Agencies and other bodies.

Response: Agree. Another GEF Project on Protected Area Management is under implementation in Tunisia. Although this Project covers forest and wetland protected areas, the experiences of the implementing and involved agencies will be available to this Project, especially with regards to participatory mechanisms.

Comment: The Project design would benefit from further clarification of the measures to promote and maintain cooperation between the various groups of stakeholders, and transparent mechanisms to ensure the active participation of relevant stakeholders in the development, implementation and monitoring of Project activities.

Response: Sustained stakeholder participation is key for successful implementation. The Project aims to set up Local Development Committees to ensure the concerns and participation of local stakeholders. At the National level, a Management Committee would ensure coordination between relevant agencies and authorities. In addition, a participation strategy with specific mechanisms for participation will be carried out.

RESPONSE TO GEF SECRETARIAT COMMENTS

The Project team is providing below responses to the GEF Council Secretariat (dated April 7, 2003 and June 22, 2003) on the revised Project Brief as submitted on March 31, 2003 and June 20, 2003, respectively. Many changes are now incorporated into the Project Brief and in the Executive Summary.

Comment-April 7: 1. Baseline funding: During the bilateral meeting, it was noted that the Government has investments currently underway to address biodiversity threats that are not yet reflected in the baseline costs of the Project Brief proposal.

Response: The Incremental Cost Analysis (see Annex 3 in Project Brief) has been revised and now clearly shows in a quantitative manner the substantial investments the Government of Tunisia is undertaking to address the threats to biodiversity. For the 10th National Plan (2002-2006) for Economic and Social Development, the Government will invest US\$ 2.1 billion for environmental protection throughout the country. A part of those national investments are related to this Project, and a thorough analysis of the relevant data shows that the baseline scenario for this Project is an investment of US\$ 278.9 million. This baseline scenario is based on site specific investments that are directly related to biodiversity threats in the Gulf of Gabès region, and that are individually cited in the Project Brief. This large scale investment program demonstrates the Government commitment to reducing the direct threats to biodiversity, and shows that the request for GEF funding will be used as an increment to on-going efforts to enhance marine and coastal biodiversity in the region.

Comment-April 7: 2. Co-financing: At this stage of review, the Secretariat finds that the proposed co-financing is below current practice.

Response: This issue has been discussed with the Government, and is being addressed through a higher level of direct Government co-financing as indicated in the revised Project Brief (see cover page). The Government co-financing for the Project has now been increased to US\$2.74 million of a total Project cost of US\$8.80 million. Secondly the Government is seeking complementary sources of bi-lateral and multi-lateral co-financing with several concrete actions already now underway. In addition, there is the possibility that European Union financing for joint marine research initiatives may be stimulated by this Project, as for example programs financed under the European Union Commission to encourage not-for-profit centers to share expertise with counterpart research agencies in Tunisia, on topics relevant to the joint research (e.g. ecosystem dynamics, critical seagrass influences, etc.).

Comment-April 7: 3. Short-Term Operational Plans: Operational plans for the proposed biodiversity sites should be developed so they can be managed while long-term management plans are in preparation.

Response: The Project implementation timetable has been revised to accelerate “on-the-ground” actions at the management sites (see Sections B3 and E3 in Project Brief). Firstly, an experimental location for the sea grass management area is now selected close to the Kerkennah Islands covering an area of 3-5 km sq., with depths of -5 to -35 metres. A short-term operational plan will be implemented at this site that will allow the testing of appropriate designs, transport methods and installation techniques for 100-200 anti-trawling and artificial reef structures. In addition, initial testing of participation techniques will also be implemented as part of this operational plan. The results of this operational plan will facilitate an early replication of the appropriate techniques for the protection of sea grasses, so that the experimental site is expanded in geographic size or that a second priority sea grass site is selected for implementation. Secondly short-term operational plans will be prepared for the other 5 sites with emphasis on identification and actions for a few priority issues at each site. The implementing agency with the

Project Management Unit will implement concrete management actions within months after Project effectiveness as a preparatory phase to long-term management measures.

Comment-April 7: 4. Indicators of Impact: The log frame includes process indicators and should also reflect indicators of impact. These should be identified as early as possible.

Response: The indicators have been fully reviewed and revised in the Project Brief, and now include a variety of impact indicators as indicated in the Project Brief. A few selected impact indicators (from Section A2) are as follows:

- **Technical and biological indicators** : variation of the density and distribution of key habitats (e.g. annual surveys of sea grasses or keystone species in the Project management areas); change in trends in alien species (e.g. annual surveys) (Note 1); establishment of new routine biodiversity and water quality monitoring programs; variation of water quality (e.g. regular monitoring);
- **Institutional indicators:** protected area management effectiveness tool at the beginning, mid-term and end of the Project (Note 2); number of training sessions carried out and number of attendees; total area of biodiversity habitat under special management measures; numbers of staff trained for biodiversity management at the local level; and increases in local institutional budget allocations.
- **Socio-economic indicators:** number of awareness campaigns and of local stakeholders participating in Project activities; number of active fishermen and revenues generated by fishing communities; number of jobs and revenues generated in the eco-tourist sector; number of visitors to the managed sites under implementation (i.e. Gulf of Bou Ghrara, Kneiss Islands, sea grass area).

Note 1: The term "alien species" used in this report covers all animal and plant species that do not originate in the Gulf region and whose introduction into the area is the result of deliberate or unintentional actions: natural passage through the Suez Canal (Lessepsian migration), species transported by ballast water or clinging to ship hulls, species imported for fish-farming or aquariums, etc. These species are sometimes also described in the literature as "introduced", "exotic species" or "invasive species").

Note 2 : The methodology to be used is based on the following document: "Reporting Progress at Protected Area Sites", Prepared for the World Bank/World Wildlife Fund Forest Alliance, March 2003. such as variation in keystone species in the managed areas, establishment of new routine biodiversity and water quality monitoring programs, and variations in alien species.

Comment-April 7: 5. Project Preparation: The Secretariat remains concerned about the status of Project preparation, considering the lengthy preparation process under the PDF-B funding.

Response: During the recent mission to Tunisia in May 2003, the institutional arrangements for the Project were thoroughly discussed with the Government, and a strong implementation structure is now agreed (see Sections D1 and E4 of Project Brief). The implementation agency for the Project will be the General Directorate for Environment and Environmental Quality (known as DGEQV) that is part of the Ministry of Agriculture, Environment and Hydraulic Resources. A strong partnership arrangement with the three most relevant government agencies has been established (i.e. national marine research laboratory-INSTM, national environmental training institute-CITET, and the national shoreline agency-APAL), so as to ensure that the Government will achieve both high quality technical expertise and efficient implementation for this Project. Meetings have been held with all partners in the Project, and the role and responsibilities of each partner entity is now clear. The collaborative arrangement within Tunisia will greatly facilitate information exchange, capacity building and build the long-term knowledge required to bring sustainable biodiversity management practices to the Gulf of Gabès region. Furthermore the Project preparation includes detailed terms of reference for each Project activity (over 25 activities), which have been developed jointly with all Project partners in Tunisia. To confirm and formalize the Project structure, a Project operations procedures manual is now underway by the Government, and this manual will further accelerate the launch of the implementation activities upon

formal approval of the GEF Council. The Government is fully engaged and active in moving towards an accelerated completion of Project preparation, and a speedy launch upon Project effectiveness.

Comment-June 22: 1. STAP Review: The Secretariat requests the entire STAP review be included in the re-submittal.

Response: The entire STAP Review is now included in the re-submittal in the Project Document and in the Executive Summary.

Comment-June 22: 2. Coordination with UNDP. The Secretariat requests clarification on coordination with the UNDP proposed Tunisia marine protected project under preparation.

Response: The clarification is described in Sections D2 and D3 of the Project Brief and in Section 5 (b) of the Executive Summary. Regular coordination meetings are taking place in Tunisia with the Tunisian agencies (i.e. DGQEV and APAL) and the GEF implementing agencies (i.e. UNDP and World Bank) to ensure distinct activities without overlaps.

Comment-June 22: 3. Proper Project Costs. The Secretariat requests that the project costs are consistent in the various parts of the project documents.

Response: All the project costs in all the project documents (i.e. Project Brief and its annexes; Executive Summary and its annexes) have been verified for consistency.

Comment-June 22: 4 Reflection of Baseline Costs. The Secretariat requests that the project proposal should reflect the indicated baseline investment summarized in the incremental cost annex.

Response: The Project Brief has been revised to reflect the baseline costs in the main text in Section B3. The Executive Summary has been revised to reflect the baseline costs in Section 4.

