

A. Project Development Objective

1. Project development objective: (see Annex 1)

The project's development objective is to support the Government of the Senegal's (GoS) and local communities to sustainably manage coastal and marine resources. Sustainable management includes responsible exploitation of resources combined with protection of the ecosystems and ecological processes critical for their replenishment.

The objective is to be achieved through three components:

- i. Development of sustainable fisheries
- ii. Conservation of critical habitats and species
- iii. Program Management, including monitoring and evaluation (M&E) and communication

2. Global objective: (see Annex 1)

The global objective of the Project is to secure the conservation and management of Senegal's coastal and marine ecosystems, which are globally significant and vital to the sustained livelihoods of coastal communities.

Senegal includes over 700 km of coastline just South of the Sahara desert. Senegal's transitional position makes the country's biological diversity significant both regionally and globally. It represents the northern limit of distribution for a large number of tropical species of coastal and marine animals and plants. It also provides critical resting and wintering areas for several Palearctic migrant birds.

The GEF would support efforts by the Department of National Parks to sustainably manage the network of protected areas along the coast using an ecosystem approach.

2. Global objective: (see Annex 1)

3. Key performance indicators: (see Annex 1)

Performance indicators for project outcome (to be refined during Project preparation) would be:

- Management effectiveness of 50% of fisheries in 3 pilot areas (Saloum delta, Senegal River delta, and Cap Vert Peninsula) improved by end of the Project.
- Effectiveness of biodiversity management improved in the 3 pilot areas, with the active participation of local stakeholders.
- Measures to alleviate the impact of reduction in fishing capacity rated satisfactory by at least 75% of targeted communities.

The performance of the Project outputs would be assessed through the following indicators (to be refined during Project preparation):

Development of sustainable fisheries

- 4 territorial user rights fisheries (TURF) agreements signed within 18 months of Project startup and 8 additional TURFs within 18 months.
- Implementation complies with agreements for 75% of TURFs in 3 of every 4 years.
- Management plans are prepared for 5 key fisheries, approved by the National Consultative

Council for Maritime Fisheries.

Conservation of critical habitats and species

- Participatory assessment of local community involvement in the management of biodiversity in the three pilot sites rated satisfactory at the end of the Project.
- Management effectiveness of endangered species improved by the end of the Project (marine turtles, sharks, manatees, 5 species of water and sea birds).
- Senegal River Delta Biosphere Reserve is established before Project Completion
- Biodiversity and Protected Area framework law promulgated before end of Project, and is in accord with commitments assumed under international conventions.

Program Management, including monitoring and evaluation (M&E) and communication

- Information sharing by Project Coordination Unit (web site, newsletter, direct requests) rated satisfactory by 80% of users.
- Public awareness of coastal and marine resource crisis and proposed remedies increased five fold prior to mid-term review.
- 95% of quarterly and semestrial progress reports prepared on time.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1) Document number: 25498-SE Date of latest CAS discussion: 2003

The Bank's Country Assistance Strategy (CAS) for Senegal (Report No. 25498-SE of March 5, 2003) derives directly from Senegal's Poverty Reduction Strategy Paper (PRSP; Report No. 25127-SE of November 20, 2002). Thus, the objectives of the CAS support the PRSP's pillars: i) wealth creation, ii) capacity building and social services, iii) assistance to vulnerable groups, iv) implementation of the PRSP and monitoring of its outcomes.

The project is consistent with the strategic orientations of the PRSP and the CAS, most particularly the need to "pursue the rational management of natural resources and the environment for sustainable development". It also fits into the Capacity building and social services pillar, in that it will help develop Senegal's "natural capital" including natural resources and the stock of biodiversity. It meets the concern expressed on page 31 of the CAS that "rapid growth and lack of national management capacities subjects Senegal's coastal and marine biodiversity to over-exploitation while posing a serious risk to the sustainability of marine exports". Finally, the project is included in the CAS's low case lending program for FY03-FY05.

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

Senegal ratified the Convention on Biological Diversity in June 1994. The proposed program fits well with the GEF Biodiversity Operational Strategy and supports the objectives set out in the Operational Program on Coastal and Marine Ecosystems. It is in line with guidance from the first, second and third Conference of the Parties to the Convention on Biological Diversity, which stresses *in situ* conservation of coastal and marine ecosystems. It specifically responds to the Jakarta Mandate endorsed at COP2, by supporting conservation and sustainable use of vulnerable marine habitats and species. The conservation and sustainable use of coastal and marine ecosystems have been identified as priorities within the national biodiversity strategy and action plan. The proposed program recognizes the importance of conserving ecosystem structures and functions in order to maintain, increase and diversify ecological services of global, national and local benefit. This integrated approach to the management of

coastal ecosystems represents a strategy that promotes conservation and sustainable use of natural resources in an equitable way.

The program responds to COP guidance in various ways including:

- taking an ecosystem approach to conservation, particularly vis-à-vis fisheries and marine biodiversity conservation;
- involving local communities and resource users, including building on local knowledge, strengthening community management for sustainable use and promoting economic incentives such as alternative livelihood opportunities;
- strengthening local and national institutional capacity to address environmental issues, especially through developing a sustainable institutional and legal framework for promoting biodiversity conservation and management, and favoring participatory models that devolve biodiversity decision-making and management to stakeholders at the local level;
- strengthening inter-institutional, and multiple stakeholder forums such as the national-level Biodiversity Committee, Discussion and Implementation fora in pilot areas, and fisheries committees so as to promote the integration of biodiversity into fisheries policies and decisions;
- strengthening regional networks for conservation and sustainable use of marine biodiversity, such as the Sub-Regional Fisheries Commission;

The proposed program seeks to use Protected Areas as development poles, designing and testing approaches that integrate biodiversity conservation and sustainable use concerns with poverty alleviation and social-economic development. If successful, the models developed and piloted would be replicated elsewhere in Senegal.

The project is also aligned with GEF Strategic Priority #1: Catalyzing Sustainability of Protected Areas and, Priority # II: Mainstreaming biodiversity in production landscapes and sectors. GEF support will make a significant contribution to strengthening the system of coastal protected areas in Senegal. This will include participation of local communities residing in and around protected areas in co-management and lead to stability of the coastal protected area network. The project will further support restructuring of the framework for biodiversity management to overcome constraints that have limited effective management of protected areas in Senegal. This would include the preparation of a Biodiversity and Protected Area Law, institutional strengthening of the Department for National Parks (DPN), as well as the establishment of the National Biodiversity Committee as the main government body overseeing biodiversity management in Senegal. Institutional strengthening would further support the DPN in its revised mandate. The new Biodiversity and Protected Area Law would integrate the principle of co-management to provide a legal under-pinning to the *de facto* policy.

The project will further provide support to ensure the sustainable utilization of marine resources, in particular fisheries, and to protect the ecological integrity of coastal and marine ecosystems in the larger biosphere reserves (some of which are proposed to be established under the project) which are also encompassing protected areas and community nature reserves. The project aims to integrate conservation priorities and sustainable use into area-based management of fisheries by local fishing communities.

2. Main sector issues and Government strategy:

2.1 Senegal's Coastal and Marine Resources in Crisis

All along the West African coast the marine environment is under pressure from excessive fishing, but nowhere is that pressure as severe or are the consequences as far reaching as in Senegal. Excessive fishing has impoverished Senegal's marine environment and has resulted in much lower catches per fishing effort. The crisis has far reaching economic and social consequences. It affects the volume of Senegal's fish exports (30-40% of total exports) and its ability to maintain employment and income for the more than 600,000 Senegalese involved in the fisheries sector. The crisis also has a sub-regional dimension since Senegalese fishermen have spilled over into neighboring countries where fish are more abundant, a situation that Senegal's neighbors are increasingly reluctant to accept.

Table 1. Fish catches and exports; industrial and artisanal vessels ('000 tons)

	1965	1995	1996	1997	1998	1999	2000	2001	2002
Total Foreign and Local Industrial Fish catch		92	89	110	84	81	52	59	47
<i>Of which tuna</i>							13		
<i>Foreign fleets</i>							15		
Artisanal fish catch		261	327	353	325	314	338	332	311
<i>Small-pelagic species</i>							290?		
Total marine catch	50	353	416	463	409	395	393	370	355
Export of fish products		91	99	103	101	119	83	78	78

(Source DOPM)

2.1.1 Artisanal Fisheries

The decline in fish resources directly threatens Senegal's artisanal fisheries. Artisan fishermen have for centuries supplied the domestic and traditional regional markets using locally built *pirogues*. Their capacity remained relatively unchanged until programs were implemented the early 1970 to promote the use of outboard motors (Japan) and more sophisticated fishing techniques (FAO). The result was a spectacular expansion, first into low value small pelagics (Sardinella, Fimbriated herring, and mackerel), and subsequently into the high value bottom feeding (demersal) fish (e.g.: groupers, croakers, snappers, barracudas, or flounders) destined for the export market. The number of *pirogues* more than doubled, as did the number of people involved in fisheries, including an undetermined number of unemployed farm laborers attempting to escape large-scale land degradation in the hinterland. By the early 1980s, artisan fishermen had essentially grabbed the market for small pelagics away from industrial vessels. By the early 1990s, they were directly competing with industrial vessels for shallow demersals, and by 2000 had captured over 40% of that market. Artisanal fishermen now catch 85% of fish landed in Senegal, dominating every fishery, except for tuna, shrimp and deep sea demersals. However, artisanal fishermen catch only a third of what each caught 20 years ago. They operate ever further from the coast, creating safety hazards and frequent conflicts with industrial vessels.

Senegal's artisan fishermen have also spilled into neighboring countries with weak artisanal capacity. An estimated 30-40% of the artisanal demersal catch currently landed in Senegal originates from Guinea Bissau, The Gambia or Mauritania. Access to these countries' water will increasingly be limited, as they improve the governance of their fisheries (Guinea Bissau) or favor the development of

in-country artisanal capacity (Mauritania).

Nonetheless, Senegal's artisanal fishermen remain amongst the most effective on the entire African coast. The artisanal fisheries involve some 12,000 *pirogues* manned by 50-75,000 fishermen that produce 60% of the value of Senegal's total marine fish catch. Its percentage of Domestic Value Added per ton of product is exceptionally high when compared to industrial vessels (48-86% vs. 22-36% during 1995-2000). In addition, artisanal fisheries employ several hundred thousand people in traditional and modern processing and marketing of fish and other services.

2.1.2 Industrial Fisheries

The decline in fish resources equally affects Senegal's industrial fishing fleet. Initially brought to Senegal by foreign companies to supply the local market with small pelagics, the fleet now targets mostly demersal fish species for local processing (mainly filleting and freezing) and export, mainly to Europe and Japan. The fleet includes about 200 locally registered fishing vessels, most of them old, of foreign origin, and operating in Senegal since the 1970s. The majority of these vessels remained profitable until the 1990s, as increasing export prices partly negated the effect of declining catches. However, the industrial fleet is no longer profitable, except for specialized vessels targeting tuna and shrimp and some of those belonging to integrated processing companies. A large part of the industrial vessels is tied-up and inactive in the port of Dakar, while others mainly fish in foreign waters.

As in artisanal fisheries, industrial vessels have increased their forays into foreign waters. By some estimates, some 30% of the industrial catch landed in Senegal originates from outside the country. Senegal's neighbors still sell fishing licenses to Senegalese vessels for rather modest fees, as part of fishing agreements with Senegal. However, these countries are increasingly reluctant to maintain the current arrangements, and are considering renegotiating them. In the long term, a major reduction of foreign catch levels of Senegalese vessels appears inevitable, with more of the catch being landed in the country of origin and with far higher license fees.

The decline in fish resources also negatively affects fish processing activities in Senegal. On shore processing of fish adds substantially to sector benefits. Thus, the value of fish exports in 2000 exceeded FCFA 186 billion, while the landed value of total domestic fish production was only FCFA 87 billion. The increase in fishing capacity from 1980 to 2000 triggered a major expansion of independent processing (freezing and filleting) capacity, essentially in and around Dakar. However, the decline in fish resources, compounded by competition from canneries in neighboring countries for raw material, has caused a drastic reduction of processing capacity. For example, the domestic tuna canning industry from 7 plants in 1980 to 3 at present, of which one is heavily subsidized with public funds. Furthermore, strong demand for raw material for local processing and export has substantially increased local fish prices, excluding poorer segments of the population from purchasing many species of fish. Lack of raw material and high prices diminish Senegal's competitiveness in the EU and Japanese markets against product from countries that better manage their fishing sector and fish resources.

2.1.3 Biodiversity

An important corollary of the decline in fish resources is a decline in coastal and marine biodiversity. Fish resources themselves are a key element of coastal and marine biodiversity and excessive fishing destabilizes the marine ecosystems, causing massive fluctuations in the size of individual stocks. Practices such as bottom trawling can cause dramatic declines or even threaten certain species. Animals that feed on fish such as sea turtles, dolphins and numerous bird species are also directly affected by the overall decline. Sharks are near extinction because of overexploitation to satisfy the international market for their fins.

The converse is that the preservation of critical habitats, such as breeding and nursery grounds, is critical to ensuring the sustainability of Senegal’s fisheries, by serving as biological refuges from which depleted areas can be restocked. Unfortunately, many critical habitats along the coast are seriously threatened. Only 5% of the historical nursery grounds remain accessible to marine species in the Senegal River delta, following the construction of the Diama dam; the shores of the Cap Vert peninsula, including Senegal’s only coral reefs off the island of Gorée, are heavily polluted by sewerage; unregulated industrial pollution has transformed the Baie de Hann into an ecological wasteland; most of the coastal lagoons and wetlands along the Petite Côte south of Dakar have been severely damaged, either by filling, by development, or by the capture of their fresh water for agriculture; rice agriculture is impinging on mangrove forests in Casamance; tourism development has greatly reduced available habitat for endangered species, most notably the availability of nesting grounds for sea turtles.

Table 2. Trends in Senegal’s coastal and marine resources since 1960.

	<i>Fisheries</i>	<i>Biodiversity</i>
1960s	Artisanal fleet supplies local and regional market.	
1970s	Industrial fleet focuses on low value small pelagics. The adoption of new techniques allows artisanal fisheries to target small pelagics	Network of National Parks established along the coast
1980s	Industrial fisheries abandon small pelagics and starts exploiting high value demersals. Export market surges following the appearance of refrigerated containers. Artisanal fisheries recaptures the market for small pelagics	Coastal biodiversity decreases, as key habitats are lost outside of the National Park network. Tensions arise with populations neighboring the National Parks
1990s	Industrial fisheries maintain operations under the cover of fishing agreements. Artisanal fisheries gradually target shallow demersals for the export market. Overall catches surge in 1997, but have been decreasing since.	Coastal ecosystem integrity threatened by overfishing. National parks move to co-management with neighboring populations. Community based parks are created.

2.2 Underlying Issues (fisheries)

The root causes of the fisheries’ crisis are identified in a document prepared in 2002 under the umbrella of the Integrated Framework for Technical Assistance for Trade Development in Least Developed Countries (IF). The Bank recently commissioned the preparation of an ESW to follow up on the IF document and outline the issues to be addressed by a sector wide program. Amongst the issues raised in the IF and ESW, the following are most relevant to the Project:

2.2.1 Fisheries management system

Senegal has not implemented measures to match fish catches with available fish resources. The 1998 Fisheries Law provides for the preparation of fisheries management plans that may set objectives for each fishery, including the total allowable catch (TAC) or the optimal fishing effort, but no plan has been prepared since the Law was adopted.

Even then, the Law does not regulate artisanal fisheries, setting no limit on who can fish, where they can fish, what they can catch or how much they can catch. The GoS attempted to incorporate regulations for artisanal fisheries in the Fisheries Law, but backed down because of political resistance. There is clear evidence that such ungoverned, open access fisheries are ecologically, economically and socially unsustainable.

Furthermore, the current regulatory regime does not support initiatives by local fishermen to limit catches. Two cases stand out. In Kayar, fishermen formed associations to improve the sustainability of the resource and to increase fish prices paid to fishermen, by controlling landings. However, the courts supported the open access rights of migrant fishermen when the associations tried to regulate their activities. Similarly, fishermen in Fass Boye established a surveillance committee in the early 1990s, to improve the management of local fisheries by deterring intruders. Industrial vessel owners went to the courts to complain about the Committee's harassment; the courts declared the Committee's activities to be illegal and the Committee was disbanded.

Senegal also sets modest administrative constraints to entry and investment into its industrial fisheries. Industrial vessels are not subjected to quotas on captures or fishing effort, although allowed under the Fisheries Law. Industrial licenses need only specify the type of vessel, spell out the allowable fishing gear, indicate target species, and designate fishing areas.

Finally, GoS provides access to foreign fleets through bilateral fishing agreements, further exacerbating the pressure on fish stocks. The Government receives approximately US\$20 million annually in return, a fraction of the value of the fish caught.

2.2.2 Knowledge and research

Senegal now has limited capacity to conduct large research programs that include stock assessments for industrial and artisanal fisheries, investigations about the marine environment, or assessments of the life cycles of specific fish species. The primary source of information on Senegalese fish stocks is the *Centre de Recherches Océanographiques de Dakar, Thiaroye* (CRODT), part of *Institut Sénégalais de recherche agricole* (ISRA), under the Ministry of Agriculture. With external assistance, most particularly from ORSTOM, the institute became the premier marine fisheries research institution in West Africa. However, the CRODT has since 1990 lost many senior staff to the private sector and to international organizations, substantially reducing its research capacity.

CRODT's current contribution to fisheries management is negligible. The institutional attachment of CRODT to the Ministry of Agriculture has been blamed for this poor performance and for the disconnect between research activities and sectoral priorities.

The detailed knowledge of fish resources required for sustainable management of Senegal's fisheries is now generally lacking or no longer up-to-date. Moreover, past research only partly explored the intricate interactions between the about 100 important fish species exploited by industrial and artisanal vessels, or the individual life cycles of these species. Even less is known about species that are rare and might require protection. Lastly, the knowledge about the socio-cultural and political context for fisheries management is also insufficient for making policy choices.

2.2.3 Governance institutions

The IF concludes that the Ministry of Fisheries must be reorganized to handle the crisis and proposes the creation of two distinct agencies: i) a Fisheries Regulatory Agency (FRA) in charge of MCS, vessel licensing, and quota administration, and ii) a Fisheries Development Agency (FDA) that would prepare and develop an integrated development and marketing strategy for Senegalese fish producers, to be financially supported by public and private investments.

2.2.4 Consultative bodies

The 1998 Law establishes a broad framework for consultations amongst stakeholders in Senegal's fisheries at the national level (*Conseil National Consultatif des Pêches Maritimes*: CNCPM) and at the local level (*Conseils locaux de pêche*).

Although about 140 local councils have been registered, none is currently effective. It also remains to be seen whether such local councils will be able to effectively manage local fisheries. First, representatives of public institutions appear to dominate, while key fishermen groups appear under-represented. Second, the councils do not have any operational responsibility, nor do they fit into an operational process to manage local fish resources. Third, the councils do not fit into the traditional hierarchy and power structure at the local level, whereas support from these structures is critical for successful management of local fishing operations. Fourth, the geographic footprints of the proposed councils do not match the footprint of the various fisheries, which is closely related to the marine ecosystems

2.2.5 Overcapacity

The current management regime has resulted in considerable overcapacity in both artisanal and industrial fisheries. The sector will only rebound if capacity is first reduced to allow recovery of fish stocks, and afterwards remains at a sustainable level.

2.3 Underlying Issues (biodiversity)

Senegal represents the northern limit of distribution for a large number of coastal and marine animals and plants. Its 700 km of coastline also include critical resting and wintering areas for several Palearctic migrant birds. Major coastal habitats include:

- **Floodplain depressions and salt flats** in the deltas of the three major rivers (the Senegal, the Saloum and the Casamance) that flow into the Atlantic Ocean. These depressions host important wintering waterfowl (Garganey, *Anas querquedula*; Pintail, *Anas acuta*; Shoveler, *Anas clypeata*) and waders (most notably the Avocet, *Recurvirostrata avosetta*, and Ruff, *Philomachus pugnax*), serve as nesting sites for White pelican (*Pelecanus onocrotalus*) and Pink flamingo (*Phoenicopterus ruber roseus*), and function as nurseries or spawning ground for coastal species, including shrimp (*Penaeus duorarum*), mullet (7 species including the Yellow Mullet, *Mugil cephalus*) and Fimbriated herring (*Ethmalosa fimbriata*).
- The **Niayes**, a series of small depressions located amongst the coastal sand dunes found North of Dakar, which hold a high plant biodiversity.
- Large expanses of **mangrove** forests found at the mouth of the Saloum and Casamance rivers (over 1,800 km²). Small patches of mangrove subsist at the mouth of the Senegal River and on the edges of coastal lagoons south of Dakar, such as the Somone. The mangrove host severely threatened populations of the West African Manatee (*Trichechus senegalensis*), the African hump-backed dolphin (*Sousa teuszii*), crocodiles (*Crocodilus niloticus*), and even hippopotami in Casamance. They also contain huge tidal mudflats where large concentrations of palearctic waders feed off an abundance of invertebrates and shellfish (Ruff, Curlew, *Numenius*, *sp.*, and

Godwits, *Limosa sp.*). They are a critical wintering site for wintering ospreys (*Pandion haliaetus*). Finally, the mangroves play a critical role in the life cycle of several commercially important coastal fish species such as mullet sp. and barracuda.

- **Sandy beaches**, where five species of sea turtles are known to nest: Olive Ridley (*Lepidochelys olivacea*), Green (*Chelonia mydas*), Loggerhead (*Caretta caretta*), Leatherback (*Dermochelys coriacea*) and Hawksbill Turtle (*Eretmochelys imbricata*). Small islands and sandbars strewn along the coast also hold large nesting colonies of White pelicans and Grey pelicans (*Pelecanus rufescens*), Slender billed gull (*Larus genei*), Grey-hooded gull, (*Larus cirrocephalus*), and important colonies of Royal terns (*Sterna maxima*) and Caspian terns (*Sterna caspia*).
- The **Cap Vert** volcanic outcrop that stands out along the otherwise sandy coastline. The rocky shores have a distinct fish fauna, with some coral patches off the Island of Gorée. Offshore islands also harbor a colony of Red-bellied tropic birds (*Phaeton aethereus*), the only one along the coast of West Africa.

The northern half of Senegal's coast is a particularly rich fish production area. The productivity is sustained by the permanent upwelling driven by the Canary current, and is boosted by the nutrients carried by its rivers, most particularly the Senegal River. Several cetaceans, most particularly Pilot whales (*Globicephalea macrorhynchus*), Bottle nosed dolphins (*Tursiops truncatus*), Common dolphins (*Delphinus delphis*), and spotted dolphins (*Stenella sp.*) further offshore, populate these coastal waters.

2.3.1 Protected Area Model

Senegal has invested considerable effort in establishing protected areas along its coast. By the late 1980s, it had developed an internationally recognized network of protected areas (Annex 6), including 5 National Parks and 3 Nature Reserves. The Djoudj National Park was registered as a World Heritage site, 4 sites were registered under the Ramsar Convention on Wetlands of International Importance, and two biosphere reserves were established. Senegal also signed a wide array of international conventions pertaining to coastal and marine biodiversity, including the Alger Convention on the Conservation of Nature and Natural resources (1972), the Convention on the International Trade of Endangered Species (CITES, 1977), the Bern Convention the Conservation of European Wildlife and Natural Habitats (1982), the Bonn Convention on Migratory Species (1983), the United Nations Convention on the Law of the Sea (1984), the Abidjan Convention on Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (1984), and the Biodiversity Convention (1994).

Nonetheless, by the early 1990s, Senegal's protected area model was floundering because of several factors. The first was rooted in the original purpose of the National Parks. They were created to promote tourism, but tourist revenue was never large enough to justify their establishment. Tourist visits to all coastal protected areas never exceeded 20,000 person-days per year. The second factor was insufficient support from the GoS, because of budget constraints. Budget allocations were not enough to pay park staff and maintain park infrastructure, further decreasing the level of protection and the attractiveness of the protected areas to tourists. The third was the unfulfilled expectation of international support, which was never sufficient to meet the commitments made by Senegal under international conventions and programs. The fourth factor was the unhappiness of the populations neighboring the protected areas, because of the loss of access to natural resources. They had not been consulted prior to the establishment of the Parks and were not associated in their management. As a result, conflicts (many involving communities of fishermen) were difficult to resolve even though prejudicial to both the parks and neighboring populations. These conflicts also undermined public support for protected areas.

The protected area crisis led to a period of experimentation starting with a pilot project, the *Espace Naturel Communautaire Keur Cupaam*, initiated by a group of women around the Popenguine Nature Reserve. Keur Cupaam has provided a model for the comanagement of protected areas and led to the establishment of several more Community Nature Reserves (CNR)

Several donors have since supported efforts to incorporate comanagement principles into the management of National Parks, but these initiatives are still in their infancy: i) IUCN, GTZ and France have funded the preparation of management plans for protected areas; ii) the *Programme de gestion intégrée des écosystèmes du Sénégal* (PGIES), supported by GEF through UNDP, is the first systematic effort at biodiversity comanagement, using a 3-pronged approach of agricultural intensification, the establishment of RNCs and comanagement of protected areas. The Program started in 2002 and intervenes in 4 pilot areas: the Parc national du Niokolo Koba, Réserve du Ferlo, the Niayes, and the terrestrial portion of the Parc national du Delta du Saloum; iii) WWF supports the establishment of Marine protected Areas, as part of the **PRCM** (*Programme Régional de Conservation de la zone côtière et marine en Afrique de l'Ouest*).

2.3.2 Biodiversity and Protected Area Framework

Senegal has *de facto* adopted a policy of comanagement and biodiversity conservation in protected areas. Yet, there remains a huge gap between this policy and the current legislation, which emphasizes command and control, and tourism, and makes no mention of biodiversity or the possible involvement of stakeholders in its comanagement. For example, current regulations technically forbid fishing in the Saloum National Park, whereas 90% of fish landed by neighboring communities probably originate from within the Park, representing approximately 10% of national captures. The existing legislation does not explicitly support the establishment of proposed new types of protected areas (biosphere reserves, marine protected areas, community nature reserves), and does not incorporate the obligations created by Senegal's signature to international agreements.

The Department of National Parks (DPN), which is responsible for Senegal's National Parks and most of its protected areas, evolved from the command and control structure that was first put into place in 1969 to manage the Niokolo Koba National Park. Although DPN was designated as the biodiversity focal point in the context of the Biodiversity Convention, its mandate was never adjusted to include biodiversity or comanagement. On the contrary, the 1986 Hunting and Wildlife Protection Law gives it the mandate to protect National Parks from human interference, and to collect and pass on to Treasury the revenue generated by visitors. Over 80% of DPN's staff has a military background, while few have any technical training in wildlife, ecology, biodiversity or community participation. Park guards are armed and empowered to use force if necessary, which they frequently do to repress poaching or smuggling.

There is also a need to formally link two new governance structures to the DPN: i) the **National Biodiversity Committee** established in 2002 to oversee the implementation of Senegal's Biodiversity Strategy and Action Plan (1999), ii) the **GRAST** (*Groupe de réflexion et d'appui scientifique et technique*) established in 2002 by the Ministry of Environment in response to the Project, to advise DPN on protected area management plans, research programs and international conventions.

Finally, long-term sustainability of the protected area network will require sustainable financing. The establishment of a Foundation to attract international support for conservation activities in Senegal, similar to what had been done for the Parc national du Banc d'Arguin in Mauritania was proposed in 1993 but never materialized.

2.4 Government Strategy

The GoS is sensitive to the need to establish stronger linkages between fisheries management and biodiversity. The Project is a strategic first step towards establishing such linkages.

2.4.1 Fisheries

The fisheries crisis is so acute that there is now a broad consensus on the need to shift the focus from sector development to sustainable management of fish resources, as proposed in the April 2001 *Stratégie du Développement Durable de la Pêche et de l'Aquaculture*. As a follow-up to this Strategy, the Ministry of Fisheries has established a working group with support from AFD to design rights based systems for Senegal's fisheries. It also plans to establish a Special Commission that will develop within a short period a plan to restructure the fisheries sector, including the implementation of a rights based system for artisanal fisheries, the reorganization of the institutional framework, and a communication strategy. Government will then call on donors to help it implement the restructuring plan.

The proposed Project would assist the GoS in implementing its fisheries strategy.

2.4.2 Biodiversity

The Government wishes to reorient the management of protected area to include biodiversity conservation and comanagement. Most particularly, the GoS wants to promote the establishment of community based protected areas, to increase the protected area coverage from 8% to 12% of the country.

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

3.1 Programmatic Approach

Project design incorporates three strategic considerations. The first is that the Project is part of a multi-donor, sector-wide programmatic response to the current crisis. The driving concern is to maintain fisheries as a source of export revenue for Senegal and as a source of employment for Senegalese fishermen. Responding to the crisis will require broad and fundamental reforms and support over a period of at least ten years. The issues involved are interrelated and a long-term solution can only be found if all aspects of the crisis are addressed.

The GoS intends to mobilize donors around a common agenda, starting with a shared definition of issues. This agenda will bring together projects currently under preparation by the World Bank and by FAO/AfDB, as well as ongoing projects from the EU, AFD and Japan. The specific areas of intervention for each donor will be finalized during Project preparation to ensure complementarity and leverage synergies. Nonetheless, the GoS has indicated that the Bank and FAO should most particularly address issues that might suffer from actual or perceived conflicts of interest with other sovereign governments.

3.2 Selectivity

The second strategic consideration is the need for the Project to be selective in the issues that it addresses and in its geographic footprint, to remain within the available funding envelope, maximize synergies with other donors and to maximize project impact. The Project cannot do everything everywhere at once. Hence, it would concentrate on improving the performance and sustainability of

artisanal fisheries in selected pilot sites. Since artisanal fisheries are labor-intensive, such a focus would have the greatest impact on poverty reduction and rural development. It would also allow the Project to address the core issue of resource management, and thus maximize synergies with biodiversity conservation objectives. Other fishery sector issues and actions, most notably the reform of sector governance, the management and surveillance of industrial fisheries, and the improvement of fish processing and export capacity would need to be supported mainly by other donors as part of the sector-wide program mentioned above.

Agreement has also been reached with GoS that the Project would focus on three pilot areas. This agreement will need to be confirmed during project preparation in light of the intentions of other donors. The pilot areas were selected because they include strong fishing communities that neighbor existing protected areas, thus lending themselves to an ecosystem approach as described below. The pilot areas include 4 out of Senegal's 6 National Parks and 3 out of 5 Nature Reserves (see Annex 6 for more details on site characteristics and biodiversity values). The areas are: the Saloum River Delta, the Senegal River Delta and the Cap Vert Peninsula (see map below). Government has also requested that the Project consider Basse Casamance, but this would only be possible when Peace agreements with rebel factions are finalized.



3.3 Ecosystem Approach

The third strategic consideration is the use of an ecosystem approach, as detailed in the Guidelines on the Ecosystem Approach to Fisheries from FAO (2002): “An ecosystem approach to fisheries strives to

balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.” Such an ecosystem approach is deemed to be necessary to ensure the long-term sustainability of Senegal's fisheries. It entails managing the entire marine ecosystem that supports the fisheries, and not just target species.

The implementation of an ecosystem approach requires cooperation among all stakeholders to achieve a shared vision. Senegal's fisheries' policy has in the past focused on catching and exporting more and more fish with little regard for sustainability, while conservation efforts focused on excluding fishermen with little regard for the economic consequences. In contrast, the Project proposes a joint implementation framework at the national and local level, which brings together the stakeholders concerned with fisheries management and those involved with biodiversity conservation.

3.3.1 Area Based co-management

The use of an **area-based co-management** system for artisanal fisheries is at the heart of the ecosystem approach proposed for the Project. The GoS recognizes that the current system of open access to fish resources by artisanal fisherman hinders the sustainable management of artisanal fisheries, and is moving towards a rights based fisheries management system. GoS also recognizes that there should be two distinct but complementary systems, one for artisanal fisheries and one for industrial fisheries.

The Project would introduce a system of Territorial User Rights Fisheries (TURFs) for artisanal fisheries, building on past experiences in Kayar and Fass Boye. The suitability of such a system was discussed with MoF officials during Project identification and the system was found to be in-line with the thinking of the working group on fishing rights. A similar approach is being tested with support from the Government of Japan through the *Étude de l'évaluation et de la gestion des ressources halieutiques de la République du Sénégal*.

Each TURF would involve the assignment of fishing rights to a group of fishermen in a specific location, generally based on customary usage. Fishermen would share with government both the power to make decisions and accountability for those decisions. The system would aim to create a healthy and resilient marine environment, and to maximize socioeconomic benefits, including rural employment. Community involvement would greatly reduce the cost of fisheries enforcement, and improve sector performance. Implementation requires strong coordination at the national level and a relatively long transition time, during which the public and private sector need external technical and financial assistance to adjust to the new regulatory regime.

The proposed TURF system would, similarly to Japan, combine group rights over demersal and resident species with some form of open access to small pelagics and other migratory species. The local fisheries committees responsible for individual TURFs would enter into a contract with the Ministry of Fisheries that would include verifiable targets for exploitation levels. The committees would have to reduce the fishing effort sufficiently to allow depleted species to recover, to maintain access to funding and other benefits from the Project.

The details of the management system will be confirmed during project preparation and reflected in a Letter of Policy for the Integrated Management of Coastal and Marine Resources. The approach will further be confirmed prior to appraisal on the basis of studies funded under the PDF B and PHRD grants. Lack of agreement on this fundamental management approach would lead the Bank to reconsider its support to the Project.

Implementation of the TURF system would require that the Government provide, through MoF and CRODT, key support services such as: i) user rights registration, ii) assessments of fish resources and

allowable catch, iii) a system to monitor, control and watch movements of industrial vessels, iv) effective enforcement and quick and fair adjudication of infractions. In addition, the TURF system would require an apex organization at the national level that can fairly represent all stakeholder groups, to reach consensus on appropriate levels of fish exploitation and the equitable allocation of these resources among stakeholders

It is also critical that parallel measures be taken by GoS to adequately regulate industrial fisheries, so that artisanal fishermen can fully benefit from TURF implementation, including: i) an extension of area reserved for artisanal fisheries from 6 to 12 miles, ii) the enforcement of fishing area restrictions, through the use of a satellite based vessel monitoring system (VMS), and iii) a highly significant reduction of by-catch by trawlers, most particularly shrimpers.

3.3.2 Protected areas as providers of ecological services

Another feature of the ecosystem approach adopted by the Project is the emphasis on the ecological services provided by Senegal's protected areas. If properly managed, Senegal's network of coastal protected areas can serve to: i) allowing nursery grounds for juveniles, ii) providing a refuge for vulnerable species, iii) preventing habitat damage, iv) promoting the development of natural biological communities, and v) facilitating recovery from catastrophic human and natural disturbances. The emphasis on ecological services radically differs from the rationale that led to the establishment of the Parks, which relied on the collection of fees from tourists by central government.

The Project would foster biodiversity conservation and management in and around existing National parks and Reserves in the three pilots areas, to maintain the ecological services and to reduce the impact of increased human activity along the coast. For this purpose, the project would follow the approach promoted by the Man and the Biosphere (MAB) program of UNESCO, because it is well understood by the GoS, sets few constraints and incorporates both the principles of ecosystem management and comanagement of natural resources.

There is already a biosphere reserve in the Saloum River Delta, which includes the Parc National du Delta du Saloum and important fishing villages such as Missira, Bétanti, Dionewar, Niodior and Djifèr. UICN, Wetlands International and WWF have actively promoted fisheries comanagement, and NGOs such as WAAME operate in the area. The Project would adopt the Saloum Delta Biosphere Reserve as the framework to comprehensively address biodiversity, fisheries and more generally development issues in the Saloum Delta.

Similarly, the Project would support the proposed establishment of a biosphere reserve in the Senegal River delta that would incorporate the Parc National des Oiseaux du Djoudj, the Parc National de la Langue de Barbarie, as well as the Gueumbeul Reserve, using an ecosystem approach based on the seasonality of the Senegal River floods.

Lastly, the Project would promote the establishment of a biosphere reserve in the Cap Vert peninsula, to include the Teunguène-Yoff Community Nature Reserve, the Parc National des Îles de la Madeleine, the historic Island of Gorée and the Baie de Hann.

3.4 Other Measures

Additional measures are required to ensure the long-term social, financial and institutional sustainability of the proposed changes.

3.4.1 Reconversion

A major consequence of implementing the proposed TURF system would be the redundancy of a significant number of fishermen. The Project would rely on the Senegal Social Investment Fund, which is managed by the AFDS (Agence de financement pour le développement social) to provide accompanying measures to aid the local fishermen that are unable to continue to participate in the fishery or face declining income, to acquire new skills and find alternative employment. Eligible measures and the total amount made available will be determined prior to appraisal. It should be noted that there has not been a significant increase in the number of fishermen since 1995. There are actually significant barriers to entry by new fishermen, including investment costs (boats, motors, and gear), pressure from existing fishermen and a steep learning curve.

3.4.2 Sustainable Funding

Sufficient and reliable funding seriously constrains effective fishery management. Given the current overexploitation of stocks, it is unrealistic to ask private stakeholders to pay for resource management, research and MCS, and these activities can for the moment only be funded by public or external sources. However, the array of measures being considered by GoS should lead to a rebound of fish stocks and higher incomes for fishermen who would then be in a position to pay for the services from which they benefit, thus reducing the budgetary burden of fisheries management on the national treasury.

In consultation with other donors, the Task Team will discuss with GoS the creation of a public/private Trust Fund during Project Preparation. The Project would use the Trust Fund to support specific management activities, including selected MCS and research activities. The Fund would initially only attract public contributions and support from donors. However, private contributions would be scheduled as soon as depleted fish stocks have recovered, either in the form of levies on fishing licenses and quota, or as taxes on fish landings. The GoS would continue to finance activities more typically performed by the public sector (fundamental research, enforcement and adjudication, regulatory services, or general administration).

3.4.3 Support to Ministry of Fisheries

The Special Commission may recommend major changes in the organization of the Ministry of Fisheries. It is expected that other donors (EU, France) might support the implementation of the Commission's recommendations.

The Project would provide complementary support, in as much as it is needed to implement a TURF system, including changes in the legal framework. For example, the lines of authority within the MoF might require adjustments to accommodate and support an area based co-management system. These adjustments would require time, careful consultation and consensus building, to avoid disrupting MoF's operational capacity.

3.4.4 Biodiversity and Protected Area Framework

Recasting the mandate of protected areas around the principles of co-management and the provision of ecological services will require a fundamental revision of the biodiversity management framework, including institutional and legal aspects, and support to DPN to fulfill its new mandate under the revised framework.

C. Project Description Summary

1. Project components (see Annex 1):

The project will comprise three components:

1. Development of sustainable fisheries
2. Conservation of critical habitats and species
3. Program Management, including monitoring and evaluation (M&E) and communication

The estimated cost of the program is US\$17 million, of which IDA would fund US\$10 million, GEF would fund US\$5 million, and the Government of Senegal would fund US\$ 2 million.

Project Component 1: Development of Sustainable Fisheries (US\$ 8.1 million)

The purpose of this component is to increase the sustainability of fisheries through the use of area-based comanagement. The component would include 5 sub-components.

Table 5. Preliminary Project Costs of Component 1 (US\$ 8.1 million)

Project Sub-component	Investment Costs	Operational Costs	TA/Training
<i>1.1 Area-Based Co-management</i>			
* Saloum River Delta	0.8	0.8	0.4
* Cap Vert Peninsula	0.4	0.4	0.2
* Senegal River Delta	0.7	0.6	0.2
<i>1.2 Fisheries Management Plans</i>	0.2	0.6	0.2
<i>1.3 Strengthening the Ministry of Fisheries</i>	0.3	0.3	0.6
<i>1.4 Evaluation of Fish Resources</i>	1.0		0.2
<i>1.5 Fisheries Management Fund</i>			0.2
TOTAL	3.4	2.7	2.0

Sub-Component 1.1: Area-based co-management of fisheries (US\$4.5 million)

The objective of the sub-component is for the majority of local fisheries to be managed through TURFs by the end of the Project within three pilot areas: i) the Saloum Biosphere Reserve, ii) the area of the future Senegal River Delta Biosphere Reserve, and iii) the Cap Vert Peninsula. The TURFs in the Cap Vert peninsula would be linked to existing protected areas.

The TURFs may target a single species, or more often a group of species that are caught by similar vessels and gear. Most TURFs would cover a clearly delineated area. However, TURFs dealing with migrating species may extend over large areas and would require close cooperation between different fishing communities. Fish resources allocated to industrial fisheries would be managed according to a different rights-based management system. Fish captures by industrial vessels would be prohibited within established TURFs.

The TURFs would bring a greater measure of local decision-making, within a framework of fisheries management at the national level. Each TURF would be managed by a TURF Committee comprising locally selected fishermen and elders.

The MoF would prepare prior to Project effectiveness a decree officializing TURF Committees and

indicating their objectives. These objectives could include: a) resolving conflicts, notably the allocation of available quantities of fish among fishermen in a TURF area, b) preparing and implementing fisheries management plans, c) optimizing income from the sale, processing and marketing of fish products, and d) ensuring the long-term sustainability of fish resources.

The Project would provide resources to the MoF to support the establishment of TURFs by fielding qualified TURF facilitators and supporting access to services required for TURF operation. The facilitators would: i) inform fisher communities about the TURF process and objectives, by presenting demonstration videos or by organizing visits to existing area-based co-management initiatives, ii) explain the link between the TURF process, the management of ecosystems (Component 2) and the reconversion initiative (Component 3), iii) aid communities in identifying and delineating possible TURFs, using rapid appraisal tools, iv) help communities in registering TURF Committees as GIEs (Groupement d'intérêt économique), v) assist communities in establishing a list of user rights within the TURF, vi) draft a framework agreement between each TURF Committee and the MoF, as well as yearly performance plans, vii) develop a participatory fish stock evaluation program for TURF target species, viii) help the TURF Committee develop a Monitoring, Control and Surveillance Plan, ix) monitor TURF implementation and report to the MoF. As a rule of thumb, each facilitator would cover no more than 3 fishing communities. The facilitators would reside in the communities and their offices would also serve as information centers for the TURF Committees.

Each framework TURF agreement would spell out the obligations of the MoF and the TURF Committee, including:

- a) **User Rights.** The MoF would concede exclusive access rights to target fish species within the TURF area to registered TURF members. TURF boundaries would be finalized in collaboration with CRODT. The MoF would provide permanent marker buoys to indicate TURF boundaries. The TURF Committee would establish a register of users allowed to fish within the TURF, using an established set of principles that take into account equity, past activity and customary tenurial claims. The register would also indicate the type of vessel and gear for each user. Users would mark their vessels to facilitate recognition. TURF Committees would set the conditions that fishermen originating from outside the local community would have to meet to fish within the TURF.
- b) **TURF Management Plan.** The TURF Committee would prepare a plan for the sustainable management of the TURF that would set a target for the fishery. It plan would include measures to reduce fishing effort to allow fish stocks to reach and stay on target, including limits on the number of vessels, the type of gear, fishing sites, or fishing season.
- c) **Resource Assessment.** The MoF fisheries would contract CRODT to analyze data collected on target species by TURF members through the participatory fish stock evaluation program, and to conduct any further investigation required to determine the abundance and trend of these species, as required for TURF management. The results of these analysis and investigations would be shared with the TURF Committee.
- d) **Monitoring, Control and Surveillance (MCS).** The TURF Committee would develop a Monitoring, Control and Surveillance Plan to ensure fulfillment of the TURF management objectives. MCS measures may include the monitoring of fish landings, the surveillance of the TURF area by fishermen, patrols by law enforcement officers, the application of bylaws developed by the TURF Committee, and procedures to call on formal MCS capacity when required (for example when an industrial vessel intrudes on the TURF).
- e) **Accompanying Measures.** The MoF would support the purchase of communication equipment and small boats, technical assistance and training, and operating expenses required for the establishment of the TURF, and for TURF operations.

Each TURF Committee would enter into annual performance contract with MoF that would: i) set the aggregate allowable catch for target species, and ii) specify how the aggregate catch is to be shared amongst registered users, iii) indicate the management measures to be taken to ensure that the catch does not exceed the aggregate allowable amount. The performance contract would also include a budget. Following TURF startup, the signature of such a contract would be a trigger for the release of funds to the TURF Committee.

The Project would test the TURF approach with 4 fishing communities during the first year (2 in the Saloum Delta and 2 in the Cap Vert Peninsula). The Project would then commission an independent study to assess the effectiveness and feasibility of the TURF concept, and recommend adjustments to the TURF design and implementation procedures in light of socio-cultural and economic conditions in different parts of the coast. Following the study, the number of intervention sites would be increased to 12. The number of intervention sites would again be increased following the mid-term review, to cover at least 50% of fisheries in the three pilot areas.

Sub-Component 1.2: Fisheries Management Plans (US\$1.0 million)

The proposed area-based co-management system would require a process at the national level to allocate fish resources to the different TURFs for each type of fisheries. The 1998 Fisheries Law empowers the Minister to commission the preparation of fisheries management plans. The project would support the preparation by the DPM of management plans for 5 key fisheries, in cooperation with CRODT. The list of key fisheries will be agreed with Government prior to Project Appraisal.

The Project would provide resources to the MoF to ensure that the CNCPM functions as the negotiation forum amongst stakeholders (including local fisheries committees such as TURF committees) for each of the 5 key fisheries, regarding the total allowable catch and fishing effort, necessary reductions in fishing capacity, and the nature of compensation for fishermen having to leave the sector. Resources would include operating expenses, secretariat services, specialized studies, startup and targeted TA, and training.

Sub-Component 1.3: Strengthening of the Ministry of Fisheries (US\$1.2 million)

The proposed area-based comanagement system would also require capacity within the Ministry of Fisheries. The Project would support the establishment of a *Cellule opérationnelle de mise en oeuvre du Projet (COMO)* within the MoF to: i) oversee the implementation of TURFs, including studies on the effectiveness of TURF management and the functioning of the local MCS systems, ii) help the MoF adjust to the area-based co-management system, iii) provide support for the preparation and negotiation of international fisheries agreements. The extent of this support will be finalized prior to Project appraisal.

The MoF will also determine prior to appraisal: i) what measures (training, recruitment) are required to ensure that staff involved in the establishment and operation of TURFs have the professional skills and experience required to implement the Project, ii) whether these staff will be directly responsible to the functional directorates in MoF (DPM, DPSP) or through the regional directorates.

Sub-Component 1.4: Evaluation of Fish Resources (US\$1.2 million)

The Project would provide resources to the MoF to contract CRODT to support the TURF management system, including the baseline assessments of key fish stocks, and the development of appropriate procedures to monitor and assess fish stocks. This sub-component would complement local research

activities funded through Sub-component 1.1.

CRODT will be asked to prepare a proposal during project preparation to support the implementation of the TURF system, preferably with the support of FAO or another donor. CRODT would coordinate rather than execute every individual research activities, entering into cooperation agreements or arrangements for "contract" research with foreign research organizations, as well as local and foreign scientists. Research planning would fully incorporate the views of stakeholders, and reflect the research priorities defined at the national level in the fisheries management plans.

Sub-Component 1.5: Fisheries Management Fund (US\$0.2 million)

The long-term sustainability of the TURF system would require sustainable funding for fisheries management, research and MCS activities. Following the preparation of the Public Expenditure Review for the fisheries sector during Project preparation, the Project would support a follow up study that would assess the political, economic and institutional viability of establishing an independent source of funding for fisheries management, research and MCS activities at the local and national level. The study would assess the feasibility of mixed private/public funding of fisheries management, identify the instruments required to collect private and public support; the most suitable institutional structure of such fund, and how it should plan and execute its operations. The study would also evaluate the feasibility of using the fund as a disbursement channel for project funds in the last two years of Project implementation .

The Fund would most likely support the operations of the TURFs, MCS surveillance committees groups, Fisheries Councils, specific routine research activities that are essential for stock assessment and resources management purposes, and clearly defined national MCS activities. It would cover both operational budgets as well as capital investments.

If the study concludes for establishing such a Fund is feasible, the Project would support its creation with a combination of TA and training.

Project Component 2: Conservation of Critical Habitats and Species (US\$ 7.7 million)

The purpose of this component is to improve the long-term management of Senegal's network of coastal protected areas. This would be done by: i) developing and implementing management plans of these areas, according to an ecosystem approach, and ii) restructuring the biodiversity management framework, to overcome the constraints that have limited the effective management of protected areas.

Sub-Component 2.1: Managing ecosystems (US\$ 6.0 million)

The Project would provide support to update, prepare, and implement management plans for 3 pilot sites: the Saloum Delta Biosphere Reserve, the proposed Senegal River Delta Biosphere Reserve, and the Cap Vert peninsula. Following is a preliminary proposal that will be updated once the results of the Biodiversity Baseline Study become available in January 2004. Most particularly, the list of on-the-ground activities and planned investments will be finalized prior to appraisal.

Preparation of each plan would be supervised by a management committee for each site including the conservateurs of the Protected areas within the proposed site, regional MoF officials, the TURF facilitators mentioned in Component 1.1, and representatives of the local communities. DPN would competitively select consultants to lead the preparation of the management plans, according to ToRs approved by the management committee. The consultants would then prepare the plans in consultation with local stakeholders. The management committees would review the draft plans and approve the

final version.

The plans would incorporate the ecosystem approach, as a model of sustainable economic use and biodiversity conservation. They would bring together existing initiatives in each of the sites, and build upon their achievements. The plans would include: i) the rehabilitation and maintenance of park infrastructure, ii) comanagement of resources to provide environmentally sustainable sources of revenue for the communities living in and around protected areas, iii) participatory assessments and monitoring of biodiversity, including turtle nesting sites and breeding colonies of seabirds, iv) participatory surveillance and enforcement, v) measures to involve communities in providing services to tourists, vi) capacity and awareness building for local stakeholders, and vii) a system to monitor and evaluate performance and impact during implementation. The management plans would also include transboundary cooperation with the Niimi National Park in The Gambia, in the case of the Saloum Delta, and with the Diawling National Park in Mauritania, in the case of the Senegal River Delta.

The management plan for the *Saloum delta* would update and implement a plan prepared in 2000 by IUCN for the Saloum Biosphere reserve. The management committee for the Saloum River delta would bring together the numerous initiatives in the Saloum River delta to increase coherence, complementarities and synergies. The plan would also establish linkages with proposed TURFs in the delta (Component 1.1), and include measures to manage fishing activities within the Parc National du Delta du Saloum.

The management plan for the *Senegal River Delta* would consolidate the set of protected areas in the Senegal River delta and contribute to the establishment of a proposed biosphere reserve. It would specifically help protect breeding sites for sea turtles and sea birds, as well a breeding sites and nursery grounds for coastal fish species. The Project would help establish a *Zone de Protection Speciale* by the Ministry of Environment that would freeze land use in the area south of the Saint-Louis to Ross road, to avoid further disruption of the ecosystem.

The management plan for the *Cap Vert Peninsula* would be a first step towards the creation of the Cap Vert Biosphere Reserve, including the Parc National des Îles de la Madeleine. The expected outcome is a set of agreements with local fishing communities to participate in the sustainable management of biodiversity along the coast of the Cap Vert Peninsula.

Implementation of the management plans would also be overseen by the management committees for each of the pilot sites. The plans would be implemented by DPN staff assigned to the protected areas within the pilot sites. Each protected area conservateur would designate one or more community liaison officer to work with local communities. Implementation would be accompanied by an awareness campaign and regular consultations at the community level.

The project would also provide complementary support to efforts by WWF, the Oceanium and other NGOs to establish Marine Protected Areas and coastal NCRs. The emphasis of this support would be on capacity building for local stakeholders and targeted technical assistance to help establish the protected areas. The extent of this support will be determined prior to appraisal following consultations with WWF and the Océanium.

Sub-Component 2.2: Strengthening the Biodiversity Conservation Framework (US\$1.7 million)

Restructuring of the biodiversity management framework would include a thorough revision of the legal framework, the institutional framework, the governance mechanism and the establishment of a mechanism to ensure long-term sustainability.

Activity 2.2.1: Biodiversity law

The Project would support the preparation of a Biodiversity and Protected Area Law, setting national objectives, incorporating obligations under international conventions and treaties that Senegal has signed, defining the different types of protected areas, their objectives and management principles, adopting comanagement as a driving principle and setting comanagement guidelines, redefining the mandate of DPN, and defining the mandate of the National Biodiversity Committee and its link to the DPN. One of the options that would be considered is the establishment of a semi-autonomous Biodiversity and Protected Area Agency (ABAP in French), with its own governance mechanism. Such an Agency would be permitted to keep the revenue that it collects from tourism, permits or fines.

Activity 2.2.2: Strengthening of DPN

The project would provide support to the DPN, to reorganize itself according to the new mandate spelled out in the Biodiversity and Protected Area Law. Prior to the adoption of the Law, the Project would support a reorganization of DPN according to the organogram adopted in 2003. Proposed measures would include:

- training of officers in participatory planning and in communication,
- technical training in biodiversity management techniques (focusing on coastal biodiversity), and monitoring,
- strengthening of performance monitoring and evaluation,
- critical equipment.

Monitoring and evaluation would focus on the performance of management plans for protected areas (Biosphere reserves, National Parks, Reserves, Marine Protected Areas and Community Nature Reserves) overseen by the DPN. Monitoring and evaluation would also cover all activities within the DPN work program. M&E results would provide effective and efficient oversight of DPN's activities to its management.

Activity 2.2.3: National Biodiversity Committee and Biodiversity Monitoring

It is expected that the Biodiversity and Protected Area Law will establish the National Biodiversity Committee as the main Governance body regarding biodiversity management in Senegal. The Committee would, amongst other functions, ensure a seamless integration between the activities of the Project and those of the UNDP funded PGIES. The Project would support the National Biodiversity Committee to monitor and evaluate the state of biodiversity in Senegal and the performance of the DPN. A study proposed for financing under a PHRD grant will define the set of biodiversity indicators that would be regularly monitored. The NBC would produce a State of Biodiversity Report with annual updates, and disclose them to the general public. The Report would indicate the status and trends of significant or threatened species and habitats.

Biodiversity monitoring would include data gathered by DPN in the protected areas that it manages (see above), as well as data collected through targeted studies or programs. The Project would fund certain key studies, most particularly regarding sea turtles, but the NBC would also seek the support of the conservation community, as well as the assistance of national and foreign researchers through research agreements.

The Project would also support the strengthening of the nascent biodiversity information system, to manage data and records resulting from the above mentioned monitoring activities.

Activity 2.2.4: Sustainable financing

In partnership with WWF, the Project would fund a feasibility study and consultations regarding the Establishment of a Trust Fund for Biodiversity Conservation in Senegal. The process would be overseen by the National Biodiversity Committee. The study would build upon the results of the Public Expenditure Review and Economic Analysis of Biodiversity, proposed to be funded under a PHRD grant. It would also take into account documents produced by the GRAST, as well as the efforts to establish an International Niokolo Koba Foundation in 1993.

Component 3. Program management, M&E and Communication (US\$1.2 million)

- 3.1 **Monitoring and evaluation (US\$0.5 million).** The PCU will manage aid from donors and co-operating partners, and ensure the efficient flow of project funds to implementation cells and procurement activities. The Project will support the development by a consultant and implementation by the PCU of a system to monitor and evaluate overall project performance and impact, using a set of key indicators. The PCU will be responsible for gathering the relevant information from the implementing institutions. The Project will also support periodic independent evaluations of program impacts and beneficiary assessments by independent consultants at startup, midterm and completion.
- 3.2 **Coordination (US\$0.4 million).** The PCU will ensure the operations of the GIRMaC Steering Committee and the Advisory Scientific and Technical Committee. It will also support the multi-institutional structures necessary in the pilot intervention areas to ensure coordination amongst various implementing agencies, including joint sessions between the CNCPM and the national Biodiversity Committee. Linkages will be worked out prior to appraisal.
- 3.3 **Communication (US\$0.2 million).** The PCU will develop and implement a communication plan to ensure the flow of necessary information to and from stakeholders on project activities.
- 3.4 **Sub-regional Coordination (US\$0.1 million).** The PCU will coordinate with sub-regional and regional structures involved in similar initiatives.

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
Component 1. Development of sustainable fisheries	8.10	47.6	7.00	70.0	0.00	0.0
Component 2. Conservation of habitats and species	7.70	45.3	2.00	20.0	5.00	100.0
Component 3. Program management, M&E and Communication	1.20	7.1	1.00	10.0	0.00	0.0
Total Project Costs	17.00	100.0	10.00	100.0	5.00	100.0
Total Financing Required	17.00	100.0	10.00	100.0	5.00	100.0

2. Key policy and institutional reforms to be sought:

The most fundamental shift in policy sought by the Project is a coordinated approach to coastal and marine resource management that links sustainable fisheries and biodiversity conservation. This would be achieved by emphasizing the importance of resource management in making Senegal's fisheries sustainable, and the need for protected areas to contribute to the maintenance of fish stocks. This policy shift would be confirmed in a letter of Coastal and Marine Resource Management Policy to be approved by GoS and agreed with the donors supporting the Project prior to negotiations. The Project Steering Committee and the Scientific and Technical Committee would be key instruments in implementing this new policy.

The most critical policy reform sought through the project in the fisheries sector is the recognition of user rights for artisanal fishermen, and the establishment of TURFs managed by local fisheries committees. This reform would represent on the one hand a major political decision by Government to share the responsibility for the management of artisanal fisheries with its stakeholders and, on the other hand, the end of free access by artisanal fishermen. The recognition of user rights for artisanal fishermen would be balanced by their commitment to manage fish resources in a responsible manner.

Other major reforms are also expected in the fisheries sectors, but their exact nature will only be determined by the Special Commission. These might include a fundamental restructuring of the Ministry of Fisheries, as well as the establishment of a Fisheries Trusts Fund, restrictions in industrial fisheries operations and capacity, and the imposition of biological rest areas and periods to allow fish stocks to recover.

The Project would also support a revision of the policy and legal framework for biodiversity and protected areas that would confirm agreements and decisions already made by Government. The revision would thus provide greater clarity to policy objectives.

At the local level, the project would leverage the biosphere concept to balance the sometimes conflicting objectives of fisheries and conservation, as well as other goals such as tourism and land development, and to promote the integrated management of coastal and marine resources. Thus, management committees would be set up in each of the three pilot areas, with representation from principal stakeholders.

The following national policies and reform programs would have a bearing on the project's implementation:

- National Conservation Strategy (NCS)
- National Environmental Action Plan (NEAP)
- National Biodiversity Strategy and Action Plan
- Integrated Framework
- Poverty Reduction Strategy Paper (DSRP)
- NEPAD
- Fisheries Sector Strategy
- Draft Letter of Environmental Policy

3. Benefits and target population:

This project will help:

- i. secure the livelihood of fishers and persons dependent on fisheries for their livelihood, by halting the decline in fish production and rural sector income; increased rural sector benefits, foreign sector earnings and employment may come later;

- ii. conserve biodiversity of global interest in the three pilot sites;

The Project would also facilitate the participation of stakeholders in the management of coastal and marine resources, including local communities, NGOs, the private sector, Government authorities and the general public. Such participation in the formulation, implementation, and monitoring of the Project is considered essential and cardinal to its success, and would be ensured through stakeholder and beneficiary workshops and consultations, throughout project preparation and implementation.

4. Institutional and implementation arrangements:

The project would have an implementation period of five years: from September 2004 to August 2009. The detailed institutional, financial, procurement, and monitoring and evaluation arrangements will be confirmed during appraisal. Nevertheless, the following proposal is currently under discussion.

4.1 Institutional framework

The project's success would require effective coordination among the various institutions involved in the management of coastal and marine resources. In this light, the GoS has established a multi-sectoral Program Steering Committee with a measure of autonomy to oversee implementation of the Program. The GoS has designated the Ministry of Environment and Sanitation to chair the Committee during the preparation period, but this decision will be reviewed during appraisal. The Steering Committee comprises 15 members (including the chair), as follows:

- Ministry of Environment (3)
- Ministry of Fisheries (3)
- Ministry of Agriculture (1)
- Ministry of Mines and Energy (1)
- Ministry in charge of Land Planning (1)
- Ministry of Tourism (1)
- Ministry of Armed Forces (1)
- Community Based NGO representative (1)
- International NGO representative (1)
- Artisanal fisheries (1)
- Industrial fisheries (1)

The Steering Committee's mandate is to focus on strategic and policy orientation and to ensure inter-sectoral coordination. Most particularly, it will ensure that the program of activities funded by the Program is consistent with the Program's objectives, as stated in above-mentioned Letter of Policy. It will also:

- review and approve annual work programs,
- review the implementation of work programs,
- review annual progress in achieving specific outcomes through a predetermined set of indicators,
- provide implementing units with suggestions for improvements.

An advisory Technical and Scientific Committee that brings together representatives of the Program Stakeholders, including representatives from the private sector, will support the Steering Committee.

For the Steering Committee to operate on a day-to-day basis, it is served by a permanent secretariat called the Project Coordination Unit (PCU). The PCU is already in place and involved in the

preparation of the project. It currently comprises a Coordinator with qualifications and experience acceptable to IDA, assisted by a Deputy Coordinator seconded from the Department of National Parks, a deputy Coordinator seconded by the Department of Marine Fisheries, a financial management specialist, a procurement specialist, support staff (Program Assistant and Driver), and technical staff (a communications specialist and a biodiversity specialist). The PCU plans to add a Fisheries Specialist and a Community Development Specialist. The PCU is currently hosted by a building provided by the Department of National Parks.

The PCU will coordinate Project activities and ensure that they are implemented in accordance to the Project Implementation Manual, including the Environment and Resettlement Framework. The PCU will be directly responsible for the implementation of Components 3. However, since the project addresses specific sectoral issues, the technical management of Components 1 and 2 will be decentralized as follows:

- *Component 1 - Development of Sustainable fisheries.* Activities will be implemented and overseen by an Operational Implementation Cell within the Ministry of Fisheries (OIC-Fisheries). The Cell will comprise a Component Manager, a combined Financial Controller/Procurement Officer, and supporting secretarial staff, and shall work under the supervision of the Ministry of Fisheries. The OIC will also oversee activities implemented through the CRODT.
- *Component 2 - Conservation of Critical Habitats and Species.* Activities will be implemented by the Department of National Parks. A Component Coordinator position will be established under the Office of the Director, but activities funded by the project will functionally integrated with DPN's Directorate structure, to minimize the administrative burdens of project management. Some of the activities related to biodiversity monitoring will be managed by the *Groupe de Réflexion et d'Appui Scientifique et Technique* (GRAST). Additional Technical Assistance will be outsourced as required.

4.2 Accounting, financial reporting and auditing arrangements

Financial Management will be the respective responsibility of three institutions: the Project Coordination Unit (PCU), the Operational Implementation Cell in the Ministry of Fisheries (OIC-Fisheries) for Component 1, and the Department of National Parks for Component 2.

4.2.1 PCU

The PCU will have the overall accountability responsibility for the Project. It will be organized and staffed to provide efficient financial management, reporting and administration, including:

- managing the transfer of project funds to the OIC-Fisheries or the DPN to implement their respective work programs cleared by the project Steering Committee;
- monitoring the use of project funds by the OIC-Fisheries and the DPN;
- establishing project accounts;
- installing appropriate accounting/budgetary and management information systems, capable of producing timely, understandable, relevant and reliable financial information that will enable management to plan, implement, monitor and appraise overall progress towards the achievement of the objectives of Components 3 and 4;
- preparing annual budgets for the Project;
- producing financial statements on a quarterly and annual basis for the Project Steering Committee and IDA/GEF;
- preparing withdrawal applications from IDA/GEF and any other source of funding;

- undertaking an annual audit of all Project expenditures by qualified external auditors acceptable to IDA.

The PCU will ensure that these functions are not only acceptable to the Government, the World Bank and any other Cooperating Partners, but also are carried out on a day to day basis as prescribed in the Project Implementation Manual (PIM) throughout project implementation.

4.2.3 Component 1 (OIC-Fisheries)

The OIC-Fisheries will establish accounts for Component 1 of the Project and ensure that they are managed by accounting/financial management personnel with qualifications acceptable to IDA. The OIC-Fisheries will:

- install an appropriate financial management system, capable of producing timely, understandable, relevant and reliable financial information that will enable the Ministry of Fisheries to plan, implement, monitor and appraise the overall progress towards the achievement of Component 1 objectives;
- maintain accurate and systematic accounts in respect of funds that they receive from the PCU to implement their work program, in accordance with internationally accepted accounting principles;
- maintain contract records, audit records, financial information, financial statements and accounting records;
- develop and implement a computerized system to monitor program implementation;
- provide regular reports to the PCU, including not limited to: monthly technical and financial reports, quarterly cost summary tables, quarterly unaudited accounts, annual technical and financial reports, annual work plans and proposed budgets, and annual audited accounts;
- prepare annual budgets for Component 1.

The PCU and IDA, or their authorized representative, shall have unrestricted access to OIC-Fisheries records and data, to inspect or audit accounts, financial information, financial statements and technical information.

The OIC-Fisheries will ensure that these functions are not only acceptable to the Government, the World Bank and any other Cooperating Partners, but also are carried out on a day to day basis as prescribed in the Project Implementation Manual (PIM) throughout project implementation.

4.2.3 Component 2 (DPN)

The DPN will establish accounts for Component 2 of the Project and ensure that they are managed by accounting/financial management personnel with qualifications acceptable to IDA. The DPN will also:

- install an appropriate financial management system, capable of producing timely, understandable, relevant and reliable financial information that will enable DPN management to plan, implement, monitor and appraise the overall progress towards the achievement of Component 2 objectives;
- maintain accurate and systematic accounts in respect of funds that they receive from the PCU to implement their work program, in accordance with internationally accepted accounting principles;
- maintain contract records, audit records, financial information, financial statements and accounting records;
- develop and implement a computerized system to monitor program implementation,
- provide regular reports to the PCU, including not limited to: monthly technical and financial

- reports, quarterly cost summary tables, quarterly unaudited accounts, annual technical and financial reports, annual work plans and proposed budgets, and annual audited accounts;
- prepare annual budgets for Component 2.

The PCU and IDA, or their authorized representative, shall have unrestricted access to the Component 2 records and data, to inspect or audit accounts, financial information, financial statements and technical information.

The DPN will ensure that these functions are not only acceptable to the Government, the World Bank and any other Cooperating Partners, but also are carried out on a day to day basis as prescribed in the Project Implementation Manual (PIM) throughout project implementation.

4.3 Procurement

Procurement for the Project will be delegated to the OIC-Fisheries for expenditures related to Component 1, and to DPN for expenditures related to Component 2. The PCU will undertake procurement for Components 3.

Procurement of Consultant services. Consultant contracts will be awarded in accordance with the Guidelines for the Selection and Employment of Consultants by World Bank Borrowers (January 1997, revised September 1997, January 1999 and May 2002). Most consultant contracts will be awarded using the Quality and Cost based Selection (QCBS) procedures by evaluating the quality of the proposal before comparing the cost of the services to be provided. Short lists of consulting firms for contracts valued at less than US\$100,000 may be comprised entirely of national firms if at least three qualified national firms are available at competitive costs.

Procurement of Goods and Works. All contracts will be awarded in accordance with Guidelines for Procurement of Goods and Services by World Bank Borrowers (January 1995; revised January 1996, August 1996, September 1997 and January 1999). Civil works would mostly comprise small infrastructure in National Parks, and possibly a water pipeline in the Senegal River Delta. Contracts for goods and civil works may be awarded on the basis of International Competitive Bidding (ICB) for contracts that are valued from US\$250,000 to US\$500,000, or National Competitive Bidding (NCB) procedures for lesser-sized contracts.

4.4 Monitoring and Evaluation

The PCU will submit quarterly reports for IDA review, summarizing the utilization of Project funds for all Project components, the implementation status of the work programs approved by the Program Steering Committee, deviations if any, problems and constraints and corrective measures being taken, and updated disbursement tables. The PCU will be responsible for ensuring that the achievement of Project objectives is monitored every quarter using the Key Performance Indicators (KPIs) in the Project's Design Summary Matrix (Annex 1) and the Project Implementation manual (PIM). The KPIs for each activity will be finalized during negotiations and will be included in the Development Credit Agreement (DCA).

The PCU will utilize a variety of sources to get feedback on progress and performance. These will include: i) meetings of the Scientific and Technical Committee, the Biodiversity Committee or the Fisheries Commission, ii) monitoring reports by the OIC-Fisheries and DPN, iii) visits of Project sites, including consultations or meetings with Project stakeholders and target beneficiaries, iii) IDA supervision missions, iv) quarterly and annual financial reports, v) the mid-term review of project implementation, vi) key performance indicators at dated implementation milestones, as provided in the

Development Credit Agreement.

It is critical that key stakeholders involved in Project implementation, such as local councils, fisheries councils, fisheries operators and NGOs, participate in the monitoring and evaluation of the Project's performance. The PCU will organize annual workshops with these stakeholders to review Project implementation. The results of these workshops will constitute an input in the M&E process.

In addition, the Project Steering Committee may request the PCU to initiate interim evaluations for any component of the project, to provide recommendations on redirection or changes in the work program.

Each implementing unit (PCU, OIC-Fisheries, DPN) will be responsible for tracking implementation progress and project milestones for the Components that it implements, and for relaying this information to the PCU through Quarterly Progress Reports (QPRs). M&E procedures will be clearly spelled out in the Project Implementation manual (PIM).

Each year of Project implementation, the PCU will prepare an overall progress report in collaboration with the Ministry of Finance, and an additional report three months prior to the mid-term review. The review should recommend measures required in light of M&E results. The GoS will prepare and send to IDA an Implementation Report (ICR) within six months of the Credit closing date.

One of the main targeted outcomes of the project is learning and future replication. As a consequence, the project will follow an outcome-oriented approach that adequately tests and captures lessons. Thus, the M&E system should be outcome focused, to allow the Project Steering Committee to suggest corrections during implementation and to enable lessons learned to be scaled up. Towards the end of the project, the Steering Committee will commission the preparation of a report synthesizing lessons learned and how these might be scaled up in sector wide approaches. Such a review will include discussions of what did and did not work, and recommendations for the next phase.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

Donor assistance to the fisheries and biodiversity sectors over the past several years has been mainly focused on the construction of landing sites for fisheries, support to a few community based resource management schemes, and the preparation of management plans for some of the protected areas. There does not seem to be a comprehensive vision or overall strategy for the sustainable management of coastal and marine resources in Senegal. Creation of such a vision will be important if the synergies needed between fisheries and biodiversity are to occur.

In this context, several approaches were analyzed with a view to maximizing the Project's benefits to the Country. The project team sought a limited number of components, pilot activities as demonstrations for the rest of the country; underpinning policy choices with effective institutional arrangements; and synergy amongst the components to demonstrate biodiversity conservation's contribution to sustainable fisheries.

The options reviewed included:

- *A policy oriented project focused on the Ministry of Fisheries* with outreach to the CRODT and the DPN. Several policy issues still need to be resolved, such as the regulation and licensing of artisanal fisheries, and the adoption of measures to reduce overcapacity. However, it is probably more important to have demonstration projects on the ground to consolidate policy decisions and to implement the Integrated Framework recommendations.
- *A project focused on biodiversity conservation.* Senegal holds biodiversity of global

importance, which is threatened and thus merits attention to ensure its sustainability. However, a resource management strategy restricted to core protected areas alone would be unlikely to engage the support of local communities, and unlikely to be sufficient to prevent continued decline of coastal and marine biodiversity due to overfishing. A more comprehensive approach to biodiversity management is required.

- *A fisheries project.* There is a broad consensus that the fisheries management system must be changed to secure employment and exports. However, the fundamental issue is that current fishing practices in Senegal are depleting fish resources. Measures must be implemented to sustainably manage the resource, including the protection of breeding and nursery grounds to ensure replenishment of depleted stocks.
- *A Community Driven Development project.* Economic growth must translate into poverty reduction. This can be facilitated by developing an enabling area for development of community initiatives that expand the population's access to the business opportunities created in the sector. However, a stand alone CDD project or a new component to existing CDD initiatives would not include the measures required to reduce overcapacity or to sustainably manage fish resources.

In summary, in agreement with GoS, the preparation team opted for a blend of the above ideas formulated in a program of concentrated intervention in a few critical habitats, which would provide models to be replicated in other regions in a timely way.

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

The Project will link directly or indirectly with several ongoing initiatives.

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
<p>Bank-financed</p> <p>The objective of the Quality Education for all Program (QEFA) is to assist Senegal establish a framework for achieving Universal primary education. The QEFA supports the Government 10-year education sector program to: (i) increase the coverage and equity of education by expanding primary and sup lower secondary enrollment especially girls and children in under-served regions; (ii) improve the quality and internal efficient of primary and general secondary education by reducing dropout and repetition rates, especially in rural and under-served areas through school grants, piloting primary education in national languages, improving teacher training; and (iii) strengthen the capacity for</p>	<p>Quality Education for all Program (QEFA) – Credit #33330</p>	<p>S</p>	<p>S</p>

decentralized management by improving the financial and budget management procedures at the decentralized and deconcentrated levels, developing policies and programs for teacher career management.			
The Objective of the Private Investment Promotion Project is to help create conditions that stimulate a sustained increase in private investment and achieve the 8 % GDP growth target through an improved investment climate, greater private participation in economic activities, and policy and sector reforms.	Private Investment Promotion Project Credit # 37620	S	S
The main objective of the Urban Mobility Improvement Program is to improve the safety, efficiency and environmental quality of urban mobility in the Dakar metropolitan area and road safety in Thies and Kaolack. Special attention to improving mobility for the urban poor by: (i) promoting public transport services, and (ii) ensuring the safe movement of pedestrians and road users.	Urban Mobility Improvement Program Credit # 33540	U	U
The Project Objectives are to: (i) improve local governance and local capacity; (ii) establish participatory and decentralized mechanisms for selecting investment programs; (iii) strengthen the national institutions supporting decentralization; and (iv) implement basic infrastructure in a selected number of rural communities.	SN National Rural Infrastructure Credit # 33150	S	S
The main objective of the project is to increase access to high-quality, up-to-date and cost-effective training for public and private decision-makers and implementers to increase their capacity to design, plan and manage economic and social development policies. A secondary objective is to establish a center of excellence in the		S	S

<p>region for distance learning and exchange of information and experience. The project will accomplish these objectives by providing access to high-quality training and information on latest advancements through distance learning using state-of-the-art communications technology.</p>			
<p>The objective of the project is to assist the Borrower improve quality of service to the Public by: (i) modernizing Information Systems at the Office of the President and establishing a Government Intranet network; (ii) modernizing Information Systems for the prime Minister’s Office and the Ministries; (iii) modernizing the Information Systems of the Ministry of Interior; (iv) modernizing the Information Systems of Public Entities; (v) modernizing the Information Systems of Public Entities; and (vi) modernizing Information Systems of the University of St Louis.</p>	<p>Public Services Information Systems Modernization Project – Credit # 32890</p>	<p>S</p>	<p>S</p>
<p>Project Development Objective is to achieve sustainable improvements in the delivery of urban water and sanitation services in unserved and low-income areas of Dakar and secondary cities by: (i) supporting further institutional and regulatory reforms and policy enhancements, thus consolidating and building on achievement of the ongoing Water Sector Project; (ii) removing major water production and distribution capacity constraints with the help of private sector financing; (iii) supporting rehabilitation of sewerage networks and increasing waste water treatment capacity; (iv) implementing a community-based program for developing on-site and semi-collective sanitation services; and (v) supporting capacity development of sector agencies, communities and households. The poorest pilot communities of</p>	<p>Long Term Water Sector Project Credit # 34700</p>	<p>S</p>	<p>S</p>
<p>The poorest pilot communities of</p>	<p>Social Development Fund</p>	<p>S</p>	<p>S</p>

<p>Senegal effectively improve their conditions by using the Social Development Fund resources in priority development areas with participation of vulnerable groups: through: (i) increasing access of the poor to basic social services; (ii) increasing access of the poor to micro-finance products and services; (iii) building capacities in all beneficiaries and financial intermediaries involved in the project; and (iv) building institutional capacity for the management, monitoring and evaluation of the poverty strategy of the Borrower.</p>	<p>Program – Credit # 34460</p>		
<p>The objectives of this credit are to improve the competitiveness of the Senegalese economy by liberalizing trade, facilitating trade and tax procedures, and supporting regulatory programs that promote competitive pricing of public utility inputs to the productive sector.</p>	<p>Trade, Reform and Competitiveness Project Credit # 34190</p>	<p>S</p>	<p>S</p>
<p>The Nutrition Enhancement Program (NEP) development objective is to improve the growth of children under three in poor rural and urban areas. The program will also help to build the institutional and organizational capacity to carry out and evaluate nutrition interventions.</p>	<p>Nutrition Enhancement Program Credit # 36190</p>	<p>S</p>	<p>S</p>
<p>The overall development objective of the project is to assist the Government in: (i) preventing the spread of HIV/AIDS by reducing transmission among high risk groups; (ii) expanding access to treatment, care and support for people living with HIV/AIDS (PLWHA) in Senegal to serve as a pilot for the implementation of Anti Retroviral Treatment (ART) in Sub-Saharan Africa; and (iii) supporting civil society and community initiatives for HIV/AIDS prevention and care. The project will support the</p>	<p>HIV/AIDS Prevention and Control Project Credit # 36010</p>	<p>S</p>	<p>S</p>

implementation of Senegal's strategic plan against HIV/AIDS for the period 2002-2006 (Plan National de Lutte Contre le SIDA-PNLS), and promote civil society and community initiatives for prevention and care, put forward by beneficiary groups selected on the basis of the technical quality and likely impact of their proposals.			
Other development agencies			

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

The terrestrial counterpart of the GIRMaC is the Programme de Gestion Intégrée des Ecosystèmes du Sénégal (PGIES), funded by GEF and implemented by UNDP. The need for a close coordination between the two projects was underlined in the GEF review of the initial PDF B Grant proposal. As a consequence, the PGIES is represented in the GIRMaC steering Committee and in its Scientific and Technical Committee. PGIES and GIRMaC also collaborate closely through the National Biodiversity Committee. Furthermore, to ensure complementarity and synergy of their respective activities, GIRMaC and PGIES have signed a Memorandum of Understanding confirming their collaboration and defining its modalities.

The Senegal River Basin Project is also extremely relevant to GIRMaC, as it addresses issues under the purview of OMVS, most particularly upstream from the Diama dam, whereas GIRMaC intervenes mainly downstream from the Diama dam. It is important to note that as per Water Charter, the OMVS, which is implementing the Senegal River Basin Project, has authority on the waters upstream from the Diama dam only. There is a clear need for GIRMaC to interface with the Senegal River Basin Project, and this will be done through the involvement of a representative of the Ministry of Hydraulics in the Project's Steering Committee. It will be the responsibility of the representative of the Ministry of Hydraulics to report to the Project's Steering Committee on OMVS activities and vice-versa.

Lastly, coordination will further be relevant with the UNEP/FAO implemented regional Canary Current Project and thus with the Commission Sous-Régionale des Pêches (CSRP), especially with regard to small pelagics, which form the bulk of Senegal's fisheries and which cross national waters, but which are not highly threatened. Small pelagics will be addressed through the fishing agreements that Senegal has signed with neighboring countries or through the CSRP, which was set up in 1985 to harmonize fisheries policies of member states. Senegal is represented within the CSRP through the Ministry of Fisheries. Thus, it will be responsibility of the representative of the Ministry of Fisheries on the Project's Steering Committee to report to the CSRP and to the GIRMaC, respectively, on ongoing project activities and potential needs for coordination.

Overall, the project will leverage existing institutional frameworks (such as the OMVS and the CSRP) to ensure coordination.

3. Lessons learned and reflected in proposed project design:

There are few recent Bank financed fisheries development projects. One of the most notable has been the Coral Reef Rehabilitation Project (COREMAP). An independent evaluation of Phase 1 of the project showed that the most successful model has been one in which communities have strong input and ownership. This is in line with the TURF approach promoted by the Project, which empowers fishing communities with the direct management of fish resources.

Government ownership and support. Government commitment to and leadership for fisheries reform

are essential to success. The Government has instigated a Special Commission that will recommend measures to reform the fisheries sector. The Project would support the implementation of a subset of these measures, in complement to support provided by other donors.

Keep stakeholders informed and to engage them from early on in the project design. Preparation of the Project is overseen by its Steering Committee and its Scientific and Technical Committee. These Committees are closely involved with Project preparation. Most particularly, the Steering Committee, the Scientific and Technical Committee and the National Biodiversity Committee held meetings on 14, 15 and 16 October to discuss the Project.

The PCU has also held meetings with local communities and government officials in the three pilot areas and plans a series of public hearings and workshops during preparation. These hearings and workshops will move beyond a simple consultative process to engage the stakeholders into full partnership in decision-making and active participation in implementation of the project in such a way that it would bring true community support for the program.

GEF and other biodiversity program experience indicates that the identification of appropriate *economic alternatives* for communities and local resource users is a key factor in changing local resource management practices in favor of biodiversity conservation and sustainable use objectives. *Community participation* and an *adequate understanding of local socioeconomic, ecological and cultural factors* are important factors for the successful identification and adoption of any alternative livelihood activities. The program will include a targeted component, designed to identify and test ways in which the linkages between economic benefits, local social development and conservation can be strengthened. Recognizing that currently there is no clear model, a learning approach will be taken.

Additional lessons to also be taken into account during program preparation and design include: i) ensuring on going stakeholder consultation and participation so as to promote ownership and identify issues and concerns early on; ii) facilitating dialogue and coordination amongst government and other key implementation partners so as to promote synergies and reduce conflicts; iii) building flexibility into program design so it can readily be adapted to respond to lessons learned during implementation and/or changing national circumstances; iv) keeping the burden placed on national budget and counterpart contributions to a minimum; v) ensuring early on that sufficient administrative and financial management capacity is in place (including familiarity with WB/GEF procedures and guidelines); vi) taking a programmatic approach that coordinate donor support so as to avoid overlaps and gaps; and vii) establishing a supportive institutional and legal framework, including putting in place mechanisms that ensure coastal and biodiversity management issues are taken into account in broader decision-making.

4. Indications of borrower and recipient commitment and ownership:

This project is being implemented by the Government of the Republic of Senegal with the support of the World Bank as part of the overall Integrated Coastal and Marine Resource Management Program, and in conjunction with the main Senegalese beneficiaries and partners, including the MEA, DPN, DPM, local communities, the private sector, donors, and the GEF Focal Point at the MEA.

Senegal has decided to reform its fisheries sector based on the orientations proposed in the Integrated Framework.

As part of a commitment to the conservation and management of its natural resources, Senegal has acceded to a number of International Conventions, including the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), the Convention on Wetlands of International Importance (Ramsar Convention), the United Nations Convention to Combat Desertification in those

Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (CCD), the United Nations Framework Convention on Climate Change (UNFCCC). Most importantly, Senegal ratified the Convention on Biological Diversity (CBD) on October 17, 1994.

The project is entirely consistent with the priorities outlined in Senegal's National Environmental Action Plan (1997), as well as the National Biodiversity Strategy and Action Plan. Component 2 is also consistent with the orientations set for biodiversity management implementation, and has been endorsed by the GEF Focal Point at the MEA.

Senegal has prepared a National Biodiversity Strategy and Action Plan (BSAP, 1999), designed to guide the development and implementation of environmental policy, legislation, and investment in the country. The BSAP is pending ratification by the Government.

The GoS has requested for a PPF advance and a PHRD grant to complete project preparation.

Environment Policy Letter and NEPAD. The Ministry of Environment has drafted a Letter of Environment Sector Policy following the Johannesburg Conference on Sustainable Development. The Letter states that Senegal intends to focus its environmental management efforts on the priorities set in by the New Partnership for Africa's Development (NEPAD), including the management of coastal habitats. It notes that overexploitation of natural resources has destroyed coastal biodiversity and threatens the livelihood of populations. It also emphasizes the need for an integrated management of coastal and marine habitats at the national and at the sub-regional level.

Within NEPAD, Senegal has been an active contributor to the **African Process on the Development and Protection of Coastal and Marine Environment in Sub-Saharan Africa.**

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

5.1 IDA Support

The Bank Group's comparative advantage is in policy, management of public goods and intervening where markets do not appear to work. The Bank adds value to the design and implementation of the Project by drawing on the worldwide experience gained through management of its portfolio of projects. The Bank has considerable experience to offer in institution and capacity building, and its environmental safeguards are recognized as setting international standards. The Bank's increasing experience in facilitating programmatic multi-donor approaches leaves it well placed to leverage additional funds from other donors and the private sector.

5.2 GEF Support

The program fits solidly within the GEF Operational Program on Coastal and Marine Ecosystems, a priority area for the first, second and third Conference of the Parties to the Convention on Biological Diversity. The Bank, as a GEF implementing agency, can therefore bring incremental grant resources to assist Senegal in tackling coastal and marine biodiversity issues of global environmental concern. This will include ecosystem protection as well as increasing capacity for sustaining this protection over time. Without these incremental resources many of the proposed program activities would likely go unfunded in the face of the numerous competing demands on the country's extremely limited budgetary resources.

E. Issues Requiring Special Attention

1. Economic

Summarize issues below To be defined None

Economic evaluation methodology:

- Cost benefit
 Cost effectiveness
 Incremental Cost
 Other (specify)

The economic analysis of the project will be done during project preparation. It will rely on the public expenditure review and sector economic analysis expected to be funded through a PHRD grant.

2. Financial

Summarize issues below To be defined None

TO BE DEFINED

3. Technical

Summarize issues below To be defined None

A draft ESW for the fisheries sector has been prepared by a consultant in Senegal. It is now under review within the Bank. The Project's strategic choices are consistent with the recommendations of this ESW.

Several background studies will be conducted during preparation, to provide information critical to the final design of the project. These studies include:

Under the PDF B Grant:

- *Community participation in coastal and marine resource management.* The study will review participation approaches and recommend an approach for the project.
- *Baseline coastal and marine biodiversity study.* This study will provide a baseline for monitoring coastal and marine.

Under a proposed PHRD grant:

- *Diagnostic of fisheries sector.* The study will provide a summary of existing information on institutional and regulatory issues, and resource abundance and trends.
- *Public Expenditure Review and economic analysis of fisheries sector in Senegal.* Identify where the money is in the fisheries sector and if expenditures match needs.
- *Public Expenditure Review of and economic analysis of conservation in Senegal.* Provide data required to identify measures to ensure the financial sustainability of the protected area network in Senegal.
- *Environmental audit of the Somone watershed.* Document the threat that small dams pose to coastal lagoons.
- *Stakeholder assessment of the Keur Cupaam (Popenguine) Natural Community Reserve.* Analyze the issues behind the pilot community based nature reserve.
- *Development and Implementation of the Biodiversity Monitoring System*

Finally, UNDP is expected to finance a study to assess the capacity of local fisheries organizations.

4. Institutional

Final institutional, procurement and financial arrangements will be confirmed during Project appraisal.

4.1 Executing agencies:

The proposed institutional framework is for a Project Coordination Unit (presently at Ministry of Environment and Sanitation), and Operational Implementation Cells at the Ministry of Fisheries and at the Department of National Parks.

4.2 Project management:

The PCU has been managing the PDF B grant and therefore has gained experience with Bank financial and procurement guidelines. It will continue serving as the lead Project Implementation Unit, but the implementation of Component 1 and Component 2 will respectively be done by an Operational Implementation Cell within the Ministry of Fisheries and by the Department of National Parks.

A Steering Committee has been established and will oversee Project implementation.

A Scientific and technical Committee has also been established and provides a forum for consultations with stakeholders and for the technical review of Project activities.

4.3 Procurement issues:

During Project preparation, a procurement accredited staff from the World Bank will review the procurement practices of all Project implementing agencies and assess their capacity to implement the Project. The assessment will be prepared prior to appraisal and will determine the Project's procurement risk and recommend the frequency of procurement supervision required during project implementation.

The PCU will prepare a Procurement Plan as soon as detailed activities under each project component are agreed upon. The plan will be completed during appraisal for final discussion at negotiation. The plan will be regularly updated during project implementation.

4.4 Financial management issues:

Detailed financial management issues will be identified by the a World Bank financial management specialist during preparation. Detailed financial management procedures will be defined during preparation, as part of the Project Implementation Manual (PIM).

Special Attention will have to be paid to designing the most appropriate channels for the disbursement of funds under each component, since the Project involves several Ministries and implementation agencies.

5. Environmental

5.1 Summarize significant environmental issues and objectives and identify key stakeholders. If the issues are still to be determined, describe current or planned efforts to do so.

The two main safeguard issues that might be raised by the Project are: i) the impact of creating Territorial User Rights Fisheries (TURFs) on migrant fishermen, and ii) the impact of the reestablishment of natural floods on local populations in parts of the Senegal River delta.

The issue of migrant fishermen would be addressed by ensuring that they retain the rights to a reasonable proportion of the catch in the various TURFs, and by facilitating their reconversion to non-fishing activities.

Since the decision regarding the reestablishment of ecological functions in the Senegal River delta will

depend on the results of studies (topographical, hydrological and development scenarios) that will not be completed until May 2005, it is not possible to assess the risks and impacts before Project effectiveness. It is proposed that this decision be made conditional on the preparation an EA satisfactory to the Bank. In the meantime, the GoS would agree to a framework spelling out the safeguard and risk management procedures that would be applied in the event that the decision is taken to go ahead with this sub-component.

The PCU would ensure that a separate EMP is prepared if the Gouvernement decides to proceed with the reestablishment of ecological functions in the Senegal River delta. This EMP would incorporate the above mentioned framework agreed to with GoS.

5.2 Environmental category and justification/rationale for category rating: **B - Partial Assessment**

The PCU has commissioned the preparation of an EA and an EMP by an independent consultant. The EMP will include an Environmental, Process and Resettlement Framework (EPRF) that will indicate when and which safeguards might be triggered during project implementation, and what procedures the PCU must take to address environmental and social risks. Preparation of the EA includes consultations with stakeholders.

Overall responsibility for the implementation of the EMPs will rest with the PCU. Operational responsibility will rest either with the Ministry of Environment and Sanitation or the Ministry of Fisheries.

The EA, EMP and the EPRF will be made available in-country through the appropriate channels prior to appraisal, and will be also disclosed through the InfoShop.

The EA, EMP and EPRF will be reviewed by Senegal's Department of Environment, to ensure compliance with Environmental Impact Assessment requirements under the Senegalese Environmental Law of 2001.

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

EA start-up date: September 15, 2003

Date of first EA draft:

Expected date of final draft: December 31, 2003

5.4 Determine whether an environmental management plan (EMP) will be required and its overall scope, relationship to the legal documents, and implementation responsibilities. For Category B projects for IDA funding, determine whether a separate EA report is required. What institutional arrangements are proposed for developing and handling the EMP?

As mentioned above, an full EA and an EMP will be prepared.

5.5 How will stakeholders be consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed EMP?

The PCU will conduct public hearings with stakeholders in each of the 3 pilot areas (Saloum Delta, Cap Vert peninsula, and Senegal River Delta). Similar meetings have already taken place at the project identification and concept development stages.

5.6 Are mechanisms being considered to monitor and measure the impact of the project on the environment? Will the indicators reflect the objectives and results of the EMP section of the EA?

Project impact on the environment will be monitored during implementation using indicators that reflect the objectives and results of the EMP.

6. Social

6.1 Summarize key social issues arising out of project objectives, and the project's planned social development outcomes. If the issues are still to be determined, describe current or planned efforts to do so.

Project preparation will include an EA and a study on Community participation in the management of coastal and marine resources.

The key social development objective is to secure the livelihood of fishermen communities by the recognition of territorial user rights. Such user rights should allow fish resources to recover and thus provide better and more predictable revenue to member fishermen. However, the recognition of user rights might reduce access to these resources by excluded groups of fishermen, thus threatening their livelihood. The project's design will include mitigation measures for such excluded fishermen, including provisional quotas and reconversion to non-fishing activities. The project will monitor the living conditions of both member fishermen and excluded fishermen.

More broadly, the Project will promote community participation in the sustainable management of coastal and marine resources in the pilot areas, including protected areas.

At the moment, participation by women in fisheries related activities is limited. The Project will seek ways of broaden women participation in the economic activities of the fisheries sector.

6.2 Participatory Approach: How will key stakeholders participate in the project?

Stakeholders were visited during identification, leading to the establishment of a discussion and implementation framework in the Saloum Delta. The PCU will facilitate the establishment of similar frameworks for the Cap Vert peninsula and the Senegal River Delta prior to Project appraisal.

Several stakeholder workshops are also planned during project preparation and will serve to capture stakeholder concerns and expectations. The workshops will help in building ownership and partnerships in the development process. The project's final design will incorporate the outcome of these workshops when setting priorities within the program. It is expected that stakeholder involvement during project preparation will increase the chances of successfully implementing the project.

During project implementation, stakeholder participation will be ensured through the Steering Committee and the Scientific and Technical Committee. In addition, stakeholders in each of the pilot areas will participate through the local discussion and implementation frameworks.

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

The Project Steering Committee includes three NGO representatives, and one representative from industrial fisheries. Locally, NGOs and other civil society organizations will be involved through the discussion and implementation frameworks.

6.4 What institutional arrangements are planned to ensure the project achieves its social development outcomes?

The Project's design provides for the participation of and regular consultations with stakeholders, including any group affected by Project activities.

Furthermore, the PCU will have a Community Development specialist that will oversee Component 3 activities (Community Development).

6.5 What mechanisms are proposed to monitor and measure project performance in terms of social development outcomes? If unknown at this stage, please indicate TBD.

The set of Key Performance Indicators will include social development indicators and thus allow regular monitoring of social development outcomes.

Beneficiary assessments will be conducted at the beginning of the Project, at mid-term and end-term.

7. Safeguard Policies

7.1 Do any of the following safeguard policies apply to the project?

Policy	Applicability
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> TBD
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> TBD
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> TBD

7.2 Project Compliance

(a) Describe provisions made by the project to ensure compliance with safeguard policies which are applicable.

Environmental Assessment. An Environmental Assessment (EA) is to be carried out during Project preparation. An additional EA would be carried out GoS decides to rehabilitate the ecological function in the Senegal River delta.

Natural Habitat. One of the main objectives of the project is to conserve and protect natural habitats in three pilot areas. The GEF component is designed specifically to address conservation of these habitats and the maintenance of their ecological functions. The Project does not involve the significant conversion or degradation of critical natural habitats.

Cultural Property. The Project should not have an impact on cultural property, but nonetheless procedures will be included in the Environment and Resettlement Framework to address cultural property issues if OP11.03 happened to be triggered during Project implementation.

Involuntary Resettlement. A process framework is to be prepared during Project preparation, indicating procedures to compensate for the reduction or loss in access to fish resources, following the establishment of TURFs. A resettlement Action Plan would be prepared if the project goes ahead with the rehabilitation of the ecological functions in the Senegal River Delta.

(b) If application is still to be determined, describe current or planned efforts to make a determination.

8. Business Policies

8.1 Check applicable items:

- _ Financing of recurrent costs (**OMS 10.02**)
- _ Cost sharing above country 3-yr average (**OP 6.30, BP 6.30, GP 6.30**)
- _ Retroactive financing above normal limit (**OP 12.10, BP 12.10, GP 12.10**)
- _ Financial management (**OP 10.02, BP 10.02**)
- _ Involvement of NGOs (**GP 14.70**)

8.2 For business policies checked above, describe issue(s) involved.

F. Sustainability and Risks

1. Sustainability:

Sustainability would be addressed at three levels:

- a. *Technical sustainability* would focus on the appropriate management of coastal and marine resources. The Project would promote a management system that reduces overexploitation, particularly of shallow demersal species, and protects critical areas that serve to replenish fish stocks. The project further proposes to improve sustainability by managing protected areas primarily to provide ecological services.
- b. *Institutional sustainability* would be promoted: i) at the local level, through a decentralized management system that would promote local ownership of objectives and management measures, ii) at the national level by supporting the reorganization and strengthening of institutional arrangements and revamping the regulatory framework for biodiversity conservation.
- c. *Financial sustainability* would be pursued by promoting the establishment of long-term financing mechanisms for fisheries management and biodiversity conservation. The main recurrent cost for fisheries management is the provision of services to fishers, including the management of the rights system, resource assessments, and Monitoring, Control and Surveillance (MCS). The Project proposes the establishment of a Fisheries Fund to finance these recurrent costs, which would ultimately be funded from the sale of fishing licenses. Fishers are expected to fund the cost of conservation measures within TURFs from their revenue. The main recurrent cost for biodiversity conservation is the cost of managing the network of protected areas, including the cost of monitoring biodiversity. The Project will promote feasibility studies and consultations regarding the establishment of a Trust Fund.

1a. Replicability:

The Project intends to change the manner in which coastal resources are managed in Senegal, most particularly by increasing the involvement of stakeholders in resource management. The broad principles of the approach have been established and will be tested in 3 pilot sites, before being replicated to the entire coast.

Valuable lessons are expected to emerge from the projects activities in the selected pilot areas. Although the chosen target areas have a significant geographical advantage over other areas, they are well positioned to allow replication and scaling elsewhere in Senegal, most particularly the Casamance River delta.

The Project will address replicability as part of its Monitoring and Evaluation plan. Thus, the Project will commission an assessment of the first 2 pilot TURFs, to determine what works and what does not work, before upscaling to other communities in the 3 pilot areas. An independent consultant will also evaluate Project performance as part of the mid-term review, including a stakeholder analysis. The PCU will ensure that the ToRs for this consultancy will include: i) a clear identification of the lessons learned from the pilot TURFs, ii) an assessment of appropriateness of the approach to areas not covered

by the Project, and iii) an identification of the changes required in the regulations governing coastal resources to ensure an enabling environment for the Project's approach, most particularly the Fisheries Law and the proposed Biodiversity and Protected Area Law.

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

The following key issues will be addressed during Project preparation:

1. Inadequate representation of stakeholders in local and national fisheries councils;
2. Uncertainty about the status of local fisheries committees;
3. Objections against the introduction of a user rights system and the use of performance contracts for artisanal fisheries;
4. Uncertainty about the status of fish stocks and socio-cultural conditions;
5. Adjustment of the institutional structure of the Ministry of Fisheries to support artisanal fisheries management;
6. Organization, responsibilities and funding of the MCS system at national and local level;
7. Organization, programming and funding of local research;
8. Reduction of fishing capacity of the industrial fleet.

Risk
<p>From Outputs to Objective</p> <p>Trust among resource users to respect limits on resources use for the common goods All stakeholders committed to addressing root causes of resource depletion Special Commission recommends needed measures PCU can retain competent staff throughout the Project</p>
<p>From Components to Outputs</p> <p>Communities cannot agree amongst themselves on TURF dispositions TURF performance contracts are not fulfilled Stakeholders cannot agree through CNCPM on measures to reduce overcapacity and overfishing Regulatory reform delayed in parliament</p>

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

G. Project Preparation and Processing

1. Has a project preparation plan been agreed with the borrower (see Annex 2 to this form)?

Yes - date submitted: No - date expected:
 8 August 2003

2. Advice/consultation outside country department:

Within the Bank: John Virdin, Indu Hewawasam, Tom Walton
 Other development agencies:
 External Review Pape Samba Diouf, World Wildlife Fund, Moubarack Lo, Gert van Santen

3. Composition of Task Team (see Annex 2):

4. Quality Assurance Arrangements (see Annex 2):

5. Management Decisions:

Issue	Action/Decision	Responsibility

Total Preparation Budget: (US\$000) Bank Budget: Trust Fund:

Cost to Date: (US\$000)

GO **NO GO**

Further Review [Expected Date]

Yves Andre Prevost
Team Leader

Mary A. Barton-Dock
Sector Manager

John McIntire
Country Manager

Annex 1: Project Design Summary

SENEGAL: Integrated Coastal and Marine Resource Management

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Sector-related CAS Goal: Integrate sustainable development principles in the management of Senegal's coastal and marine resources (in accordance with goal number 7 of MDGs) and contribute to poverty reduction in coastal populations (in accordance with the World Bank mission)</p>	<p>Sector Indicators: Reduce poverty level of people dependent on coastal and marine resources Reduce rate of fish resource depletion Conserve habitats critical for preservation of resources</p>	<p>Sector/ country reports: CAS Evaluation Independent evaluation of fish stocks Improvement in biodiversity of critical habitats</p>	<p>(from Goal to Bank Mission)</p>
<p>GEF Operational Program: OP#2 Coastal, Marine and Freshwater Ecosystems</p>	<p>Outcome / Impact Indicators: Compliance with international conventions. Biodiversity Conservation and Sustainable Use program of activities continued and global biodiversity benefits sustained beyond the end of the program.</p>	<p>International Convention on Biodiversity Implementation Progress Reports. Subsequent ecosystem and biodiversity management and monitoring data and evaluation reports.</p>	
<p>Project Development Objective: Support the Government of the Senegal's (GoS) and local communities to sustainably manage coastal and marine resources.</p>	<p>Outcome / Impact Indicators: Management effectiveness of 50% of fisheries in 3 pilot areas (Saloum delta, Senegal River delta, and Cap Vert Peninsula) improved by end of the Project. Effectiveness of biodiversity management improved in the 3 pilot areas, with the active participation of local stakeholders. Measures to alleviate the impact of reduction in fishing capacity rated satisfactory by at least 75% of targeted</p>	<p>Project reports: Score derived from monitoring reports by the Direction des pêches maritime and the CRODT Score derived from the World Bank/WWF Protected Areas Management Effectiveness Tool Independent participatory evaluation of targeted communities</p>	<p>(from Objective to Goal)</p> <p>Government of Senegal recognizes the importance of involving stakeholders in the management of coastal and marine resources.</p>

	communities.		
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Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Output from each Component:</p> <p>Component 1: Local communities sustainably manage coastal and marine fisheries</p> <p>Component 2: Local communities participate in the conservation of critical coastal and marine habitats and species</p> <p>Component 3:</p>	<p>Output Indicators:</p> <p>4 territorial user rights fisheries (TURF) agreements signed within 18 months of Project startup and 8 additional TURFs within 18 months.</p> <p>Implementation complies with agreements for 75% of TURFs in 3 of every 4 years.</p> <p>Management plans are prepared for 5 key fisheries, approved by the National Consultative Council for Maritime Fisheries.</p> <p>Participatory assessment of local community involvement in the management of biodiversity in the three pilot sites rated satisfactory at the end of the Project.</p> <p>Management effectiveness of endangered species improved by the end of the Project (marine turtles, sharks, manatees, 5 species of water and sea birds).</p> <p>Senegal River Delta Biosphere Reserve is established before Project Completion</p> <p>Biodiversity and Protected Area framework law promulgated before end of Project, and is in accord with commitments assumed under international conventions.</p> <p>State of biodiversity report prepared on an annual basis</p>	<p>Project reports:</p> <p>Signed TURF agreements, progress reports from MoF and independent evaluation</p> <p>Monitoring reports from the MoF</p> <p>Monitoring reports from MoF</p> <p>Independent assessment</p> <p>Score or composite index measuring implementation status of endangered species action plan</p> <p>Decree in Journal Officiel</p> <p>Journal Officiel</p> <p>Report</p>	<p>(from Outputs to Objective)</p> <p>Trust among resource users to respect limits on resources use for the common goods</p> <p>All stakeholders committed to addressing root causes of resource depletion</p> <p>Interest and commitment of local level stakeholders to participate in the planning and implementation of Project activities</p> <p>Active support and participation of coastal communities</p>

<p>The Project Coordination Unit effectively manages the Project</p>	<p>Information sharing by Project Coordination Unit (web site, newsletter, direct requests) rated satisfactory by 80% of users at mid-term and at the end of the Project.</p> <p>Public awareness of coastal and marine resource crisis and proposed remedies increased five fold prior to mid-term review.</p> <p>95% of quarterly and semestrial progress reports prepared on time.</p>	<p>Independent evaluations</p> <p>Independent public awareness survey at inception and at mid-term review</p> <p>Annual evaluation of fiduciary and technical performance, and impact by World Bank</p>	<p>PCU can keep its staff throughout Project implementation</p>
<p>Project Components / Sub-components: Component 1:Development of Sustainable Fisheries 1.1 Area-based co-management of fisheries (TURFs) 1.2 Management Plans and the National Consultative Committee (CNCMP) 1.3 Strengthening of the Ministry of Fisheries 1.4 Evaluation of Fish Resources 1.5 Fisheries Management Fund Component 2: Conservation of Critical Habitats and Species 2.1 Managing Ecosystems 2.2 Strengthening the biodiversity Conservation framework Component 4. Program management, M&E and Communication</p>	<p>Inputs: (budget for each component) US\$8.1 million US\$4.5 million US\$1.0 million US\$1.2 million US\$1.2 million US\$0.2 million US\$7.7million US\$6.0 million US\$1.7 million US\$1.2 million</p>	<p>Project reports:</p>	<p>(from Components to Outputs)</p>

3.1 Project Monitoring and evaluation	US\$0.5 million		
3.2 Coordination	US\$0.4 million		
3.3 Communication	US\$0.2 million		
3.4 Sub-regional coordination	US\$ 0.1 million		

Annex 2: Incremental Cost Analysis

SENEGAL: Integrated Coastal and Marine Resource Management

1. Broad Development Objectives:

The over-riding national development objectives for Senegal are wealth creation, capacity building and social services, assistance to vulnerable groups.

Excessive fishing has impoverished Senegal's marine environment thus posing a serious risk to sustain the fisheries sector which directly or indirectly provides a livelihood for large numbers of artisanal fishermen and others employed in processing and marketing of marine resources. To address the fisheries crisis the Government of Senegal is embarking on a multi-donor sector-wide programmatic response of which this project will be part of. The driving concern is to maintain fisheries as a source of export and a source of local employment.

The Government of Senegal recognizes the importance of environmental protection activities and sustainable use of natural resources in pursuing its development agenda, as rapid growth and lack of national management capacities subjects Senegal's coastal and marine habitats to degradation and over-exploitation of biodiversity.

2. Global Environmental Objective:

Senegal's coastal and marine ecosystems present the northern limit of distribution of a large number of coastal and marine animals and plants. The coast contains a rich variety of coastal ecosystems harboring considerable biodiversity of global significance. The 700 km of coastline including several coastal islands include critical resting and wintering areas for Palearctic migratory birds and nesting areas for seabirds. Floodplain depressions and salt flats in the deltas of the three major rivers, the Senegal River, the Saloum River and the Casamance River sustain large concentrations of palearctic waders, invertebrates and shellfish. Several coastal sites around the Senegal River are known as critical hatching sites for marine turtles. The Niayes, a series of small depressions, holds a coastal sand dune ecosystem with high plant diversity. Large mangrove forests and swamps (over 1,800 km²) at the mouth of the Saloum and Casamance rivers and smaller mangrove patches at the Senegal River mouth host populations of the severely threatened West African Manatee, the African hump-backed dolphin, crocodiles and hippopotami. The northern part of Senegal coastal waters is a particularly rich fish production area, which is sustained by the permanent upwelling of the Canary Current and further boosted by the nutrient rich rivers, especially the Senegal River. Several marine mammals, for example pilot whales, bottle nosed dolphins, common dolphins, and spotted dolphins populate these waters attracted by the fish resource (see Annex 4 for a detailed description of ecosystem and biodiversity values of project sites).

The global environmental objective of the project is to secure the conservation and management of Senegal's coastal and marine ecosystems, which are globally significant and vital to sustain livelihoods of coastal communities.

3. Status quo:

The Government of Senegal has long recognized the importance of protecting the natural resource base. The conservation and sustainable use of coastal and marine ecosystems have been identified as priorities within the National Biodiversity Strategy and Action Plan. Senegal has taken action and established protected areas along its coast in the 1980s. A decade later, the Government adopted a policy of co-management for biodiversity in protected areas responding to the weak public and especially local support for the earlier protected areas model based on command and control. Yet, there is a critical need to address the gap between the adopted policy and the out-dated legal, regulatory and

institutional framework for environmental management. In particular the subsidiary legal and regulatory framework for protected area management needs to be improved and updated to integrate the *de facto* policy of co-management. There is also need to formally link two new governance structures to the Department of National Parks: i) the National Biodiversity Committee established in 2002 to oversee the implementation of the National BSAP (1999), and ii) the GRAST (Groupe de réflexion et d'appui scientifique et technique) established in 2002 by the Ministry of Environment in response to this project.

There has been a number of past and ongoing smaller projects that aim to preserve coastal resources (see Annex 5). However, long-term project impact has been limited as many of these projects did not have the scope nor leverage to address underlying causes described above that have prevented effective biodiversity conservation, such as limited public and local support to biodiversity conservation due to a protected areas model that is founded on an outdated regulatory and institutional framework providing little support to involvement of local stakeholders in management. Overall support to biodiversity management activities in Senegal remains insufficient to ensure sustainability and additional sources of funding are needed to tackle the current crisis in marine and coastal resources.

4. Baseline Scenario

4.1. Scope:

In the absence of GEF assistance, support to coastal and marine resources management over the next several years would be financed through IDA/GoS and mainly focus on development of sustainable fisheries in three larger intervention areas: the Senegal River Delta, the Saloum River Delta, and the Cap Vert Peninsula. Activities would include the establishment of area-based co-management for fisheries, development of fisheries management plans and institutional strengthening of the Ministry of Fisheries. To limited extend funds would benefit biodiversity management and conservation in the already existing biosphere reserve in the Saloum River Delta. The management plan for the Saloum Delta Biosphere Reserve would be improved and updated in terms of establishing linkages with fisheries management in the proposed TURFs to be established in the area, and especially surrounding the Saloum Delta National Park incorporated in the biosphere reserve. Support would further be provided for limited institutional strengthening of the Department of National Parks to implement the biosphere management plan in the light of building linkages to fisheries management.

4.2. Benefits:

Implementation of the baseline scenario will result in national benefits and include ensuring environmental sustainability through protection of the natural resource base (in particular fisheries) of coastal and marine ecosystems, improving the sustainability and productivity of marine resource based industries, in particular fisheries, strengthening and empowerment of fishing communities, development of alternative employment opportunities and improved environmental awareness coastal communities. The GIRMaC would thus be the first fisheries project in Senegal that would focus on the challenge of managing fisheries resources sustainably at a time when fisheries development has become ecologically unsustainable. The project would thus provide a strategic shift following a history of past and ongoing projects that have promoted the development of fisheries and the increase of fisheries exports.

Limited global environment benefits would occur from the stabilization of the fisheries, including reduction of excessive fishing, reduction of destructive practices such as bottom trawling, and preservation of critical fish habitat, such as breeding and nursery grounds. This will have a downstream impact on the larger ecosystem of the Saloum River Delta and limited global

environmental benefits would occur.

4.3. Costs: Total expenditures in the baseline scenario would be US\$12.0 million

5. GEF Alternative

5.1. Scope:

With support from the GEF, the Senegalese Government is ready to adapt an ecosystem approach to sustain the ecological services provided by Senegal's protected areas and undertake the necessary measures to ensure the preservation of coastal and marine biodiversity of global importance starting in three larger intervention areas, the Senegal River Delta, the Saloum River Delta, and the Cap Vert Peninsula. The three areas proposed for the Project include the three main fisheries hotspots in Senegal, including a majority of Senegal's fishermen. They also include 4 out of Senegal's 6 National parks and 3 out of 5 nature reserves. The project would follow the approach promoted by the Man and the Biosphere (MAP) program of UNESCO and two new biosphere reserves would be established in the Senegal River Delta and the Cap Vert Peninsula in addition to the already existing Biosphere Reserve in the Saloum Delta. There is strong support from international and local NGOs and community organizations for the Government's efforts to incorporate the principles of ecosystem management including co-management for protected areas in the overarching legal and regulatory framework. The Government of Senegal is committed to promote the establishment of community based protected areas and increase of the total areas protected from 8% to 12%. Biodiversity protection within the biosphere reserves would focus especially on selected sites (protected areas and community reserves) recognized as regionally and globally important for their rich coastal and marine habitats. The larger intervention areas were selected because they include strong fishing communities that neighbor existing protected areas and thus lend themselves to an ecosystem approach.

The biosphere management plans that will be developed following an ecosystem approach as a model for biodiversity conservation and sustainable economic use will include: i) Recasting of the mandate of protected areas around the principle of co-management and provision of ecological services; ii) establishment of participatory assessments and monitoring of biodiversity, iii) participatory surveillance and enforcement, iv) measures to involve communities in providing eco-tourism services, v) strengthening capacity and awareness building for local stakeholders, vi) rehabilitation and maintenance of critical park infrastructure, vii) establishment of a system to monitor and evaluate management performance and biodiversity conservation impact.

The GEF Alternative would also include revision of the biodiversity management framework in Senegal, including institutional and legal aspects. In particular, the preparation of a Biodiversity and Protected Area Law, setting national objectives and management principles and redefining the mandate of the DPN and the National Biodiversity Committee would be supported. Accordingly, the DPN would be receive support for reorganization and institutional strengthening to fulfill its new mandate under the revised framework. The National Biodiversity Committee would be established as the main governance body regarding biodiversity management in Senegal and would monitor the state of biodiversity in Senegal and the performance of DPN. The GEF alternative would further allow a feasibility study and consultations regarding the establishment of sustainable financing options for the long-term sustainability of the protected area network.

5.2. Costs:

The total cost of the GEF Alternative is estimated at US\$17.0 million with the following details:

1. Development of Sustainable Fisheries	US\$ 8.1 million
2. Conservation of Critical Habitats and Species	US\$ 7.7 million
2.1. Managing of ecosystems	US\$ 6.0 million
2.2. Strengthening the Biodiversity Conservation Framework	US\$ 1.7 million
3. Program Management, M&E, and Communication	US\$ 1.2 million

5.3. **Benefits:**

Undertaking the GEF Alternative would provide the Government of Senegal with the opportunity to establish a comprehensive system of coastal and marine biosphere reserves that comprise national parks, biodiversity conservation areas, communal fisheries management areas. Benefits classified as national would include ensuring environmental sustainability through protection and sustainable use of the natural resource base of coastal and marine ecosystems, improving the productivity of resource based industries, in particular fisheries, community strengthening and empowerment, alternative employment opportunities and improved environmental awareness. Global benefits would include the protection of coastal and marine biodiversity; removal of threats to coastal and marine ecosystems that are globally significant; strengthened public awareness of global environmental issues and mobilization of community efforts in support of conservation efforts; improved monitoring of the status of important biodiversity resources. Because of its scope and its focus on establishing an appropriate enabling institutional and regulatory framework for biodiversity, GIRMaC complements and supports ongoing activities of much lesser scope and leverage (see Annex 5). Additionally, important lessons concerning co-management of natural resources, applicable in other biosphere reserves and protected areas throughout the world, will be learned during project implementation.

6. **Incremental Costs**

The difference between the cost of the Baseline Scenario (US\$ 12.0 million) and the cost of the GEF Alternative (US\$17.0 million) is estimated at US\$ 5.0 million, which is the sum being requested as a GEF grant. This represents the incremental costs for achieving global environmental benefits through i) establishment of two marine/coastal biosphere reserves encompassing existing protected areas and community nature reserves and linking up to so-called TURFs, fishing areas where territorial user rights are held by artisanal fishing communities under an area-based co-management system, ii) development and implementation of management plans for the biosphere reserves following an ecosystem approach, and iii) restructuring the biodiversity management framework to overcome constraints that have limited effective management of protected areas, including preparation of a Biodiversity and Protected Area Law, institutional strengthening of the Department of National Parks, and establishment of the National Biodiversity Committee as the main Government body regarding biodiversity management in Senegal. These measures would eventually lead to sustainable conservation of globally significant biodiversity.

Incremental Cost Matrix

Component/ Sub-Component	Cost Category	US\$ Million	Domestic Benefit	Global Benefit
1. Development of Sustainable Fisheries				
	Baseline	8.1	Secured long-term livelihood of fishing communities in target areas. Increased fisheries sector benefits. Poverty alleviation amongst coastal communities by creation of alternative development opportunities.	Some reduction of ecosystem degradation through stabilization of excessive fishing pressures and reduction of destructive side-effects of fishing practices.
2. Conservation of Critical Habitats and Species				
2.1. Managing ecosystems	Baseline	2.0	Basic management of the Saloum Delta biosphere reserve with focus on linkages with fisheries management in respective TURFs.	Improved biodiversity conservation and sustainable use in the Salom Delta biosphere reserve.
	GEF Alternative	6.0	Comprehensive ecosystem approach established for three larger coastal target areas; Participation of communities in biodiversity management and sustainable use, participation in surveillance, enforcement, and monitoring.	Improved conservation of globally significant coastal and marine biodiversity; removal of threats, and improved resource use practices by the communities in and around target areas;
	Incremental	4.0		
2.2. Strengthening of the Biodiversity Conservation Framework	Baseline	0.7	Limited institutional strengthening of the Directorate for National Parks.	Improved management capacity of the DPN.
	GEF Alternative	1.7	Restructuring of the biodiversity management framework to overcome constraints limiting effective PA management, reorganization and institutional	Improved coordination, monitoring, and governance of biodiversity conservation and

			strengthening of the DPN and strengthened role of the National Biodiversity Committee.	sustainable use issues in Senegal. Role of communities in co-managing PAs has legal underpinning.
	Incremental	1.0		
3. Program Management, M&E and Communication				
	Baseline	1.2	Enhanced monitoring and information exchange permitting adaptive management. Improved scientific and technical knowledge base for decision-making. Strengthened capacity for sub-regional coordination.	Not specific.
TOTALS				
	Baseline	12.0		
	GEF Alternative	17.0		
	Incremental	5.0		

Annex 3: STAP Roster Technical Review
SENEGAL: Integrated Coastal and Marine Resource Management

A. STAP Roster Technical Review:

Project Concept Document on Integrated Marine and Coastal Resource Management: P058367

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1.0 Summary of main points

The Project Concept Document sets out a comprehensive fisheries management project in which the conservation of ecosystems is seen as essential to the sustainable management of the fisheries and conservation of biodiversity. Key objectives of the GEF relating to the conservation and sustainable use of coastal habitats and the renewable resources they generate are incorporated into the Project Development Objective. The four main project components support the GEF objectives through measures designed to assist local communities to sustainably manage coastal and marine resources, improve the management of coastal and marine ecosystems, improve the welfare of stakeholders and strengthen governance through human resources and institutional capacity development. The GEF contribution that is sought will fund activities that are essential to the success of the planned improvements to the management of fisheries and the management of protected areas of international ecological importance. The GEF funding will in turn benefit from the planned activities within the project and activities that are incorporated into other projects, such as the Long-Term Water Supply project that are planned for the future. This will add value to the GEF contribution. The planned five-year life span of the project is appropriate to the complex issues addressed and the time required to achieve substantive progress relative to the investment of funds and technical expertise.

It is clear that the wise and sustainable use of coastal and marine resources is a major challenge to the conservation of biodiversity and the longer-term economic and social development of Senegal. Given the multitude of environmental problems associated with coastal and nearshore marine resources development in Senegal outlined in the Project Concept Document (PCD), the reviewer raised concerns over the feasibility of achieving the stated objectives of the project with the World Bank. Additional information was requested on how these concerns are being addressed by GEF, World Bank or other donors, and how the risks concerning the viability of the planned activities would be reduced thus allowing the planned project to achieve its project and more global objectives. Additional information has now been provided that has helped remove most of the Reviewer's initial concerns. There remain some points where the project documentation could be strengthened. These are set out in the following more formal STAP review. It is understood that the initial concerns and the additional information provided by the World Bank staff will be attached to the Project Documentation.

It is perhaps helpful to explain that, given the complexity of the marine and coastal development issues in Senegal, it has been difficult for the Bank staff to provide all the information that would help in a STAP review. It is understood that the Bank staff are operating under new procedures where the earlier PCD has been replaced by a much shorter document, which limits the amount of information that can be presented in the form of a Project Concept Note or PCN. This brief document cannot provide all the background information necessary to address issues that would ensure that the GEF would be able to fully assess the viability of a proposed project. It is therefore suggested that the PCN serve as a summary of the proposed project for the GEF which would be accompanied by a more full document that presents a comprehensive

explanation of the logic behind the strategic design of the planned activities and information that illustrates how the project objectives would be supported by other projects funded by the GEF, World Bank or other donors.

2.0 Scientific and technical soundness of the project

It is understood that the fisheries catch in Senegal's waters has declined as a result of both environmental degradation of fisheries habitats and over fishing. However, fish catches have stabilised and the project is placing emphasis upon the improved management of in-shore demersal stocks and coastal habitats in three pilot sites where a significant improvement in catches, the environment, and the welfare of local communities can be achieved and then transferred to other coastal areas. It is understood from the Bank technical staff that the artisanal fishers who dominate this fishery are supportive of the integration of community based management where user rights and responsibilities for managing fishing efforts are linked to new responsibilities for helping to protect coastal habitats. This in effect re-established older traditions of user rights and communal responsibility, and appears to be socially and environmentally sound.

The participative approach taken in the Project Concept Document is a very positive attribute and should help the achievement of the objectives of conserving biodiversity, promoting more sustainable forms of fisheries and other resource uses, and the successful identification and development of alternative livelihoods for local communities in the three target areas. 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. The proposed development of TURFs is innovative and illustrates the sound social concepts and participatory natural resources management features of the project design.

The planned provision of a "Community Development Fund" to help create alternative livelihoods should help to broaden the economic base of coastal communities and reduce pressures from migrant fishers if sufficient effort is put into engaging them and enabling them to make use of this fund. It is understood that the detailed implementation of this Fund is the subject of further study.

The role of the private sector in the development and implementation of the fisheries management and biodiversity management strategies, plans and management measures could be further developed as a major element of the project design. Brief mention is made of the "private sector" in terms of the commercial fishery. Further emphasis could be given in the project design to the active participation of important stakeholders, such as industrial fishing interests, the processors, and fish product exporters.

Initial concerns were raised by the reviewer over the high levels of pollution entering the coastal and marine environment near Dakar, loss of fisheries support habitat in the delta of the Senegal river, and the effects of coastal flood plain reclamation for agriculture and their cumulative impact on the sustainability of fisheries. It is understood that the Bank funded Long-Term Water Supply Project will help to reduce industrial and domestic pollution and its effect on coastal systems over the next 10 years. The Bank is also working with the Government of Senegal (GoS) to explore ways in which the former fisheries habitats formed by the delta and surrounding floodplains of the Senegal River could be rehabilitated.

The success of the proposed project also depends heavily upon the effective cooperation of line agencies with the Senegal Ministry of Environment and Sanitation as the Lead Agency and the Department of National Parks. 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 with respect to

how cooperation and coordination will be developed and maintained. 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, such as the TURFs, that are specifically designed to stimulate community based support for the improved conservation of habitats and the sustainable use of renewable resources.

The project design anticipates the need to deal with migrant fishers who might conflict with fishers operating under TURF arrangements. This could be strengthened by making it more clear how any adverse effects on fishers and other natural resources dependent stakeholders resulting from any conservation measures proposed might be dealt with/compensated for. The same issue may affect tourism developers and other private sector interests.

The project does address weaknesses in the enforcement of existing national laws and regulations. It would be helpful to have further explanation of how the measures proposed would help to ensure better use of these legal instruments. The legal instrument aspects with respect to international conventions, treaties and protocols could be more clearly spelt out in the Project Brief.

Identification of global environmental benefits

The section on the Global Development Objective directly addresses the goals of the GEF Operational Programme no. 2. The Project design aims to strengthen measures being implemented by the Government of Senegal to reduce the impact of coastal development and over-exploitation of natural resources.

The project also seeks to strengthen the management of the national park system through institutional development and human capacity building. A key point in the project rationale is that movement of people towards the coast in search of economic opportunities through entry into the artisanal fishery poses a threat to many protected areas and parks. Therefore, action to enhance community based management and protection of coastal habitats will help to support the conservation of biodiversity and the environmental services that help to sustain fish stocks as well as staging and feeding areas for migratory birds.

The global benefits for the conservation of biodiversity that will result from the planned interventions are primarily related to the improved management of the demersal fishing grounds and the protected areas and parks in the three target sites. It is intended that there will be corresponding benefits to other coastal ecosystems through the expansion of the TURF system.

Given these integrated social and environmental measures, the project 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 surrounding region by focusing on sites that are representative of other parts of the West Africa and contribute to the overall biodiversity of the region

It would be helpful to link the conservation of the three target TURF sites with benefits to other ecosystems and natural resources of the coastal zone. It would also be helpful if the project design incorporated measures to examine the potential for establishing management links with other countries where there may be a trans-boundary effect and the measures adopted in Senegal could be extended to the wider coastal region of this part of West Africa. Conversely, it would be beneficial to explore ways in which improved management of watersheds in other countries could enhance/add value to the effect of the biological diversity conservation and improved fishery measures proposed for Senegal.

Replicability of the project

There is good scope for the replication of the planned activities in other parts of Senegal and potentially in other African countries 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 supported Action Plans for the marine and coastal areas of Africa might 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 to introduce as the project design incorporates measures for both local participation and for human resources development and institutional strengthening that 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 GEF, Bank and other donor focal areas, and avoids negative impacts in focal areas outside 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 coastal land and water management.

Although it is understood that there are constraints on the length of PCN document produced for review of the project within the Bank, it is very important to illustrate the complexity of the environmental and fishery management issues affecting the coastal and marine systems in Senegal. It is equally important to make explicit the strategic thinking behind the focus on the improved management of the in-shore demersal stocks through the allocation of user rights to communities. This is brought out in the further documentation supplied at the reviewer's request and a way should be found to ensure this is incorporated into the PCN and the more full project proposal for the GEF. Also be important to illustrate the linkages to other focal areas, such as the Long-Term water Supply project,

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

The project should illustrate how it will 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 Senegal economy. The planned measures 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 the three target sites should yield other ecosystem services and social and economic benefits to local communities and those in the wider region. It would be helpful to indicate how these could benefit other sectoral agencies whose cooperation is important to the successful implementation of the planned activities.

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 commercial/industrial fisheries could strengthen the project design as mentioned above. The project could also elaborate on the planned use of concepts such as the co-management of resources.

Capacity building aspects

The additional supporting documentation provided at the request of the reviewer gives a clear exposition of measures to strengthen awareness and basic expertise to support biological diversity conservation. For example, the creation of the Cap Vert Marine Biosphere Reserve is intended to enhance peoples' awareness of the negative environmental and economic effects of pollution, the measures designed to enhance capacity to manage the national park system at a national government and community level are also important features of the project. 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.

Peter Burbridge
December 17th, 2003

B. Response to STAP Review:

Response to the STAP Review:

Most of the issues raised in the preliminary review were addressed through a note prepared by the Task Team, which is at the end of this Review. Nonetheless, in his formal review the reviewer underlines some points where the Project documentation could be strengthened. Below is a list of these points, followed by the Task Team's response.

1. Summary of main points

It is suggested that the PCN serve as a summary of the proposed project for the GEF which would be accompanied by a more full document that presents a comprehensive explanation of the logic behind the strategic design of the planned activities and information that illustrates how the project objectives would be supported by other projects funded by the GEF, World Bank or other donors.

***Response:** The strategic background to the Project is already very extensive and detailed for a PCD. As suggested it will be strengthened by incorporating into the PAD the information provided by the Task Team at the reviewer's request prior to Council submission. This will be done during Project preparation. The PAD will also be strengthened in light of the findings of the studies funded through the PDF B grant, as well as a set of studies being funded through a PHRD grant. Furthermore, it is important to note that the Project goes hand in hand with a Fisheries ESW currently being finalized.*

2. Scientific and technical soundness of the project

a. The role of the private sector in the development and implementation of the fisheries management and biodiversity management strategies, plans and management measures could be further developed as a major element of the project design. Brief mention is made of the "private sector" in terms of the commercial fishery. Further emphasis could be given in the project design to the active participation of important stakeholders, such as industrial fishing interests, the processors, and fish product exporters.

***Response:** Ongoing preparation work will further promote active stakeholder involvement in Project design and implementation. However, the Project's Steering Committee that is already operational includes one representative each from industrial fisheries and from artisanal fisheries, out of 15 members. There is also one representative from international environmental NGOs, and another from local environmental NGOs. The Scientific and technical Committees includes representatives from processors and fish product exporters.*

Regarding industrial fisheries, it should be noted that implementation of the Project is expected to facilitate a gradual reduction in the presence of industrial vessels in Senegalese waters, except for deep demersals and large pelagics. This is seen as a desirable impact in the above-mentioned Fisheries ESW. In contrast, the role of artisanal fisheries should continue to grow because of their greater efficiency. Participation of industrial fishery concerns in the Project would focus on facilitating this gradual decrease and on identifying which fisheries they would continue to exploit.

b. The success of the proposed project also depends heavily upon the effective cooperation of line agencies with the Senegal Ministry of Environment and Sanitation as the Lead Agency and the Department of National Parks. 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 with respect to how cooperation and coordination will be developed and maintained. 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.

Response: *The Department of National Parks is part of the Ministry of Environment and Sanitation and coordination between these two bodies should not be an issue. More broadly and as mentioned above, the key coordinating bodies at the national level are the Steering Committee and the Scientific and Technical Committee (Pages 26-27 of the Brief), which include representation from the private sector.*

The Project Coordination Unit will ensure that the Project Steering Committee and the Scientific and Technical Committee remain operational throughout Project implementation, by providing them with the necessary secretarial and technical support.

The performance of the Steering Committee largely depends on the extent of political commitment. The Task Team has noted a very high level of commitment, which reflects the broad perception that the fisheries crisis requires immediate attention.

The key coordinating bodies at the level of the three pilot areas are the Area Management Committees described on Page 21 of the Project Brief. The detailed composition and the ToRs of these committees will be finalized during Project preparation.

c. The project design anticipates the need to deal with migrant fishers who might conflict with fishers operating under TURF arrangements. This could be strengthened by making it more clear how any adverse effects on fishers and other natural resources dependent stakeholders resulting from any conservation measures proposed might be dealt with/compensated for. The same issue may affect tourism developers and other private sector interests.

Response: *Bank policy requires that an explicit mitigation plan be included in the Project to address any adverse impacts on populations affected by the Project. Such a plan will result from the Environmental and Social Assessment currently under way, and will be incorporated into the Project prior to appraisal.*

d. The project does address weaknesses in the enforcement of existing national laws and regulations. It would be helpful to have further explanation of how the measures proposed would help to ensure better use of these legal instruments. The legal instrument aspects with respect to international conventions, treaties and protocols could be more clearly spelt out in the Project Brief.

Response: *Enforcement of existing laws and regulations is certainly a problem in Senegal. However, the PCD identifies the need for changes in the legal and regulatory instruments. In the case of fisheries, the main issue is the recognition of comanagement involving artisanal fishermen. In the case of biodiversity, Component 2.2 includes the preparation of a Biodiversity and Protected Area Law that would incorporate obligations deriving from international conventions, treaties and protocols.*

Regional Context

It would be helpful to link the conservation of the three target TURF sites with benefits to other ecosystems and natural resources of the coastal zone. It would also be helpful if the project design incorporated measures to examine the potential for establishing management links with other countries where there may be a trans-boundary effect and the measures adopted in Senegal could be extended to the wider coastal region of this part of West Africa. Conversely, it would be beneficial to explore ways in which improved

management of watersheds in other countries could enhance/add value to the effect of the biological diversity conservation and improved fishery measures proposed for Senegal.

***Response:** Senegal is a member of the Sub-Regional Fisheries Commission for West Africa, which could serve as a platform for Senegal to share experiences with its neighbors. Furthermore, the Government of Senegal has expressed an interest in broadening the mandate to bring greater focus on the integrated management of coastal and marine resources. The task team will ensure that appropriate measures are included in the replication plan.*

Replicability of the project

a. There is good scope for the replication of the planned activities in other parts of Senegal and potentially in other African countries 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 supported Action Plans for the marine and coastal areas of Africa might offer a vehicle for broader communication and sharing of results.

***Response:** The UNEP Large Scale Marine Ecosystem Project for the Canary Current is one of several coordination platforms available. Also very important is the above mentioned Sub-Regional Fisheries and the African Initiative in the context of NEPAD.*

b. Although it is understood that there are constraints on the length of PCN document produced for review of the project within the Bank, it is very important to illustrate the complexity of the environmental and fishery management issues affecting the coastal and marine systems in Senegal. It is equally important to make explicit the strategic thinking behind the focus on the improved management of the in-shore demersal stocks through the allocation of user rights to communities. This is brought out in the further documentation supplied at the reviewer's request and a way should be found to ensure this is incorporated into the PCN and the more full project proposal for the GEF. Also be important to illustrate the linkages to other focal areas, such as the Long-Term water Supply project.

***Response:** As mentioned above, the final PAD will incorporate the Task Team's response to the initial comments of the reviewer and benefit from the results on ongoing studies.*

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

The project should illustrate how it will 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.

***Response:** The Project Brief has been revised and now mention linkages to the Programme de Gestion Intégrée des Ecosystèmes du Sénégal (PGIES), as well as the Senegal River Basin Project. See Section D2 of the Brief.*

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 Senegal economy. The planned measures 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 the three target sites should yield other ecosystem services and social and economic benefits to local communities and those in the wider region. It would be helpful to indicate how these could benefit other sectoral agencies whose cooperation is important to the successful implementation of the planned activities.

Response: This is an interesting point and it will be further addressed through the final stages of project preparation and will be reflected in the final PAD.

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 commercial/industrial fisheries could strengthen the project design as mentioned above. The project could also elaborate on the planned use of concepts such as the co-management of resources.

Response: Industrial/commercial fisheries are already taken into account by the inclusion of representatives on the Project Committee. In the fisheries context, the use of comanagement is explained in Section B3.1 and in Section C1. In the biodiversity context, comanagement would translate into officializing the role of local stakeholders in management committees, most particularly during the preparation and implementation of management plans. Ongoing studies will provide further information that will be incorporated in the final PAD prior to appraisal.

Capacity building aspects

The additional supporting documentation provided at the request of the reviewer gives a clear exposition of measures to strengthen awareness and basic expertise to support biological diversity conservation. For example, the creation of the Cap Vert Marine Biosphere Reserve is intended to enhance peoples' awareness of the negative environmental and economic effects of pollution, the measures designed to enhance capacity to manage the national park system at a national government and community level are also important features of the project. 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: A participation plan will be developed prior to Project effectiveness and included into the final PAD.

Additional GEF Annex 4
Description of Project Sites in the Coastal Area of Senegal
SENEGAL: Integrated Coastal and Marine Resource Management

Based on the results of the preparation phase, three pilot sites were selected:

- Senegal River delta
- Cap Vert Peninsula
- Saloum River delta

The pilot sites were selected on the satisfaction of the following criteria:

- ecosystems critical for Senegal's fisheries, including endemic or threatened species,
- protected areas of sufficient size,
- fishing communities with strong cultural identity and a commitment to sustainable management of marine and coastal resources (as expressed during preparatory workshops).

1. Senegal River Delta

Description

The Senegal River delta site comprises: i) the Ocean front from Saint-Louis to Taré (35 km), ii) the Senegal River estuary, from the mouth of the River to the Diama Dam (50 km), and iii) the river's floodplain in Senegal, east of the Lac de Guiers, an area of approximately 2,500 km².

The Oceanfront consists of a low sand spit less than 100 m wide that channels the River towards its mouth to the South. The Southern part of the sand spit is within the Parc National de la langue de Barbarie, whereas the northern part is within the town of Saint-Louis and hosts Guet Ndar, a fishing community of 38,000 people that is the largest in Senegal. The fishers from Guet Ndar mainly specialize in catching small demersals (shad and mackerel) all along the coast of Senegal and even in Mauritania and Guinea Bissau.

The Senegal River estuary includes a network of interconnected pools that dry up during the dry season, with a sprinkling of *Avicennia nitida* and *Rhizophora* sp. mangrove. A string of villages lines the eastern side of the estuary (the Gandiole). Their main activity is garden farming, although there is limited number of fishers.

The extensive floodplain is cut by a network of streams (Gorom, Lampsar, Kassack, Ngallam, Djeuss, Taouey, Djoudj) that bring floodwaters to several large depressions (Djoudj, Guiers, Trois-Marigots, Ndiaël).

Ecosystem

The Senegal River Delta is located in a semi-arid zone, just south of the Sahara. Accordingly, its ecosystem is entirely dependant on the yearly seasonal flood, from August to November, which creates an oasis of greenery within an otherwise Sahelian landscape of thornbush savannah. Historically, the flood inundated as much as 250,000 hectares. The floodwaters brought in juvenile marine fish, such as the Flathead Mullet, *Mugil cephalus*, and the Bonga Shad, *Ethmalosa fimbriata*, and the Pink Shrimp, *Penaeus duorarum*, which sojourned and grew in the floodplain for several months before returning to the

sea, helping to replenish coastal fish stocks. Once the waters had receded, the floodplain provided rich pastures critical for livestock from the Ferlo during the dry season. The flood also helped maintain large groves of *Acacia nilotica* that provided woodfuel and fodder.

Although, the area flooded is much reduced, the delta still attracts large numbers of wintering palearctic waterfowl and waders, including up to 550,000 ducks, 250,000 shorebirds and 2,500 European Spoonbills, as well as African water birds, including 20,000 greater flamingos and up to 12,000 lesser flamingos.

The presence of fish in the delta sustains colonies of birds such as Pelicans, Cormorants and Darters, herons and egrets. Furthermore, the abundance of juvenile fish at the mouth of the Senegal River helps sustain breeding colonies of gulls and terns.

Major threats

The main threat has been the selection of development initiatives that do not take into account the delta's natural ecosystem and has focused entirely on the needs of irrigated agriculture for the production of sugarcane and rice. As a consequence, the natural flood cycle is compromised by a complex network of dykes that was initiated in the 1860s and now almost entirely stops floodwaters from reaching the floodplain. Approximately 50% of the area has been converted to agriculture, while most of the other 50% has become a desert because of the lack of water, forcing people out of the area. Nearly 95% of the marine fish nursery grounds are now inaccessible.

The construction of a salt-barrier dam at Diama on the Senegal River in the middle of the delta has had a significant impact on its ecology. The estuary now effectively stops at Diama and the waters upstream from Diama are salt free year round, allowing year-round irrigated agriculture and providing a reliable freshwater supply to the city of Dakar. However, the salt water barrier has had unintended drawbacks, most particularly: i) the spectacular spread of invasive freshwater plants such as the Cattail, *Typha australis*, the Water Lettuce, *Pistia stratiotes*, and more recently in 1999 the Giant Salvinia Aquatic Fern from Brazil, *Salvinia molesta*, which has been termed the world's worst weed, ii) a bilharzia epidemic that now affects over ¾ of the population in the delta. Drainage water from irrigated crops laden with fertilizer and pesticides have compounded the problem. If not addressed urgently, the *Salvinia* problem could become a national disaster.

Contrary to conventional wisdom, the Diama dam does not appear to have significantly reduced the volume of floodwater reaching the Atlantic Ocean. On the contrary, the network of dykes along the banks of the Senegal River has increased flood levels at the mouth of the Senegal River, threatening the city of Saint-Louis.

Another major issue is the sustainability of the fishing community in Guet Ndar. The Guet Ndar fishers are active from Mauritania to Guinea Bissau. These two countries are considering measures to further restrict access to their fisheries, which could lead to an increase in fishing effort by Guet Ndar fishers in Senegal. Moreover, the adoption of Territorial User Rights Fisheries (TURFs) in other parts of Senegal would further concentrate the fishing effort by Guet Ndar fishers in the waters North of Dakar.

Protected areas within the site

The long-term objective is for the pilot site to become a Biosphere Reserve, with the Parc national des oiseaux du Djoudj at its core. Eventually, the Biosphere Reserve might include part of the right bank of the

Senegal River Delta in Mauritania, including the Diawling National Park.

Biodiversity management and conservation efforts in the Senegal River Delta have been piecemeal, focusing on creating enclaves within the currently dysfunctional ecosystem. It is expected that the establishment of a Biosphere Reserve encompassing the delta will focus the debate on its ecological functions, starting from the fundamental role played by the annual floods.

The pilot site would initially include four existing protected areas:

- *Parc national des oiseaux du Djoudj,*
- *Réserve spéciale de faune du Ndiaël,*
- *Réserve de faune de Gueumbeul,*
- *Parc national de la langue de Barbarie.*

The GIRMaC would also include conservation measures targeted at the following significant areas that are not currently protected:

- Mangroves and mudflats of the *Gandiolois*;
- Mangroves and mudflats North of Saint Louis;
- The Trois-Marigots;
- The reserve of Nord Saint Louis.

1.1. The Parc National des Oiseaux du Djoudj (PNOD)

(Created on 14 April 1971; designated Ramsar site Senegal 1SN001 on 11 July 1977; inscribed on the World Heritage List in 1981, and listed on the Montreux record of priority sites for conservation action in 1993.)

Location: 16°20' N, 16°12' W, in a low valley, 60 km upstream from the mouth of the Senegal River. The Park is approximately 20 km upstream from the Diama dam. The PNOD is contiguous with the Diawling National Park in Mauritania, which protects similar habitats.

Area: 16,000 ha

Description: The PNOD is an inland wetland that is part of a vast basin of impermeable holomorphic soils forming saline flats in the Senegal River delta between the main channel to the north and the Gorom stream to the South. The area is subjected to managed seasonal floods, creating large open expanses of water that benefit water birds.

Flora: Vegetation is of Sahelian type with shrub savanna consisting of *Acacia nilotica*, *Acacia tortilis*, *Acacia seyal*, and *Balanites aegyptiaca*. Flooded areas are colonized by dense stands of *Typha australis*, *Sporobolus robustus*, *Phragmites vulgaris* and Tiger Lotus, *Nymphaea lotus*. Low lying areas that have saline clay soils that are colonized by Tamarisk, *Tamarix senegalensis*, and by *Salicornia* spp.

Fauna: It is estimated that almost 3,000,000 birds from 360 species visit the park yearly. Most importantly the Park constitutes a major staging and wintering ground for palearctic migrants from September to April. As many as 200,000 ducks (Garganey, *Anas querquedula*, Shoveler *Anas clypeata*, Pintail, *Anas acuta*, and Teal, *Anas crecca*) and 200,000 shorebirds (Avocet, *Recurvirostra avosetta*, Ruff *Philomachus pugnax*, and Black-tailed Godwit, *Limosa limosa*) have been observed in the Park. Over 1,000 European Spoonbill, *Platalea leucorodia*, also winter there.

The Park is also a major nesting site for African water birds, hosting up to 5,000 pairs of White pelican, *Pelecanus onocrotalus*, approximately 80% of the West Africa's Night Heron, *Nycticorax nycticorax*, and breeding populations of Whitefaced tree duck *Dendrocygna viduata*, Fulvous tree duck, *Dendrocygna bicolor*, Spurwinged goose, *Plectropterus gambensis*, Purple Heron, *Ardea purpurea*, various egrets, *Egrets* spp., African Darter *Anhinga melanogaster rufa* (a near-threatened species according to Birdlife International), Common Cormorant, *Phalacrocorax carbo*, White-Breasted cormorant, *P. lucidus*, the Greater Flamingo, *Phoenicopterus ruber*. It is also a breeding site for the Black Crowned Crane, *Balearica pavonina*.

The Arabian Bustard, *Ardeotis arabs*, a species in danger of extinction, is starting to make discreet appearances in the Djoudj.

Mammals include the Warthog, *Phacochoerus aethiopicus*, and Patas Monkeys, *Erythrocebus patas*. Crocodile and the Dorcas gazelle have been successfully reintroduced into the Park.

Threats: The PNOD is currently the only portion of the delta on the Senegalese side that benefits from effective protection. It is surrounded by villages that farm rice and raise livestock. Incursions by livestock looking for fodder during the dry season have been a major source of conflict with neighboring populations.

The Djoudj is filled up yearly from the Diama Reservoir during the flood. As a result, invasive freshwater plants, such as the Water Salad, *Pistia stratiotes* and the Giant Salvinia Water Fern, *Salvinia molesta*, now choke waterways. Park management has struggled to find a water management regime to reduce this threat.

The African manatee, *Trichechus senegalensis*, has not been observed since 1981 and seems to have disappeared.

Management: North Rhineland-Westphalia (Germany) has financed the preparation of a management plan that includes the establishment of a biological station.

Tourism: The PNOD attracts over 5,000 visitors per year.

Resource use: Local populations also gather *Typha australis* and *Sporobolus robustus* to make mats. *Nymphaea lotus* is used in cooking (for couscous).

1.2. Réserve Spéciale de Faune du Ndiaël

(Created on 2 January 1965; Designated Ramsar site Senegal 1SN002 on 11 July 1977)

Location: 16°10'-16°18' N, 16°-16°17' W; south of RN 2 between Saint Louis and Richard Toll

Area: 46,550 ha

Description: Seasonally flooded inland wetland on the southern fringe of the Senegal River delta, in an area that was previously flooded at high water periods.

The Ndiaël is a large depression filled through several channels, most particularly the assemblage known as the Trois-Marigots and from the Lac de Guiers through the Niety Yone. The seasonal flux of the floodwaters used to feed Ndiaël but has been disrupted by existing dykes. Areas to the North and the East have been converted to irrigated agriculture.

Flora: Vegetation is dominated by annual grasses such as *Paspalum*, *Panicum*, and *Eragrostis*. Woody vegetation is scarce.

Fauna: Historically, the Ndiaël was more important for water birds than the Djoudj. The area served as a nursery ground for certain marine species such as the Yellow

Mullet, *Mugil cephalus*, Bonga Shad, *Ethmalosa fimbriata* and Pink Shrimp, *Penaeus duorarum*.

Threats: The main threat is the absence of floodwaters because all the streams that fed the Ndiaël have been cut by dykes. Most waters that now reach the Ndiaël are from the drainage of irrigated perimeters to the North and are highly polluted with pesticides.

1.3. Réserve spéciale de faune de Gueumbeul

(Created on 30 May 1983; designated Ramsar site Senegal 1SN004 on 27 September 1986)

Location: 15°57' N, 16°28' W, 10 km South of Saint-Louis

Area: 720 hectares

Description: Inland wetland within the Senegal River estuary that is subjected to seasonal floods. The reserve includes a floodable saltpan (chott) by low sand dunes. Serves as a complement to the Parc National des Oiseaux du Djoudj.

Flora: Protection has encouraged the regeneration of thorn bush savannah dominated by *Acacia* sp.

The buffer zone includes stands of *Rhizophora* and *Avicennia* mangrove.

Fauna: When flooded, the Reserve hosts significant numbers of waders, most notably Avocet. There is a breeding colony of Little Tern, *Sterna albifrons*.

Dama and dorcas gazelle are bred on the site.

Threats: The main threat is the poor internalization of conservation activities by neighboring villages. As a result, local populations continue to harvest natural resources (fuelwood, non-timber forest products such as *Acacia* pods, salt, fish resources) and livestock continues to graze in the Reserve.

Management: The Reserve is within one of the target sites for the GEF funded *Programme de développement intégré des écosystèmes au Sénégal* (PDIES).

The Reserve is within one of the potential water pathways in the event that Senegal decides to rehabilitate the Ndiaël.

Experimental research station for Sahelian fauna. Paddocks for the gazelle brought in from Spain have been erected.

There is as yet no officially approved management plan.

Tourism: Approximately 750 visitors per year.

1.4. Parc National de la Langue de Barbarie

(Created on 9 January 1976)

Location: 15°45'-16°55' N, 16°50' W

Area: 2,000 hectares

Description: Comprises a low lying sand spit bordering the Senegal River, including the current mouth of the Senegal River, a marine area of 500m from shore, and the waters inside of the sand spit.

Flora: Natural vegetation is scarce and reduced to *Ipomea pes-caprae* and *Sesuvium portulacastrum*. A few *Prosopis juliflora* survive on the sand spit.

Fauna: Turtles and birds, fish and dolphins

Fauna: Important breeding colony of seabirds, on a small island in the River, including 3,500 pairs of Grey Headed Gull, *Larus cirrocephalus*, 2,500 pairs of Slender-billed gull, *Larus genei*, 200 pairs of Gull-billed Tern, *Gelochelidon nilotica*, 2,000 pairs of Royal Tern, *Sterna maxima*, 250 pairs of Caspian Tern,

Sterna caspia, and 50 pairs of Black Tern, *Chlidonis niger*.

The mouth of the Senegal River is also a critical feeding ground for White Pelicans, *Pelecanus onocrotalus*, breeding in the Djoudj, and an important wintering ground for palearctic Ospreys, *Pandion haliaetus*.

The sand spit is a known breeding site for marine turtle such as *Chelonias mydas*, *Caretta caretta*, and *Dermochelys coriacea*.

Threats: Most of the Park was converted to a Cassuarina plantation in the 1980s, limiting its function as a breeding site for Sea Turtles and seabirds.

Another major issue is the fact that the habitat is dynamic whereas the park's boundaries are static. This has created confusion regarding the exact area protected.

The Park does not protect the vestiges of mangrove on the eastern shore of the estuary.

Management: A management plan is under preparation. Park authorities have involved local populations in the providing ecotourism services.

Tourism: Approximately 4,000 visitors the park each year.

1.5. The town of Saint-Louis

Founded as a French colonial settlement in the 17th century, Saint-Louis was urbanized in the mid-19th century. It was the capital of Senegal from 1872 to 1957 and played an important cultural and economic role in the whole of West Africa. The location of the town on an island at the mouth of the Senegal River, its regular town plan, the system of quays, and the characteristic colonial architecture give Saint-Louis its distinctive appearance and identity. Saint-Louis was inscribed as a World Heritage Site in 2000.

2. Cap Vert Peninsula

Description

This pilot site includes 70 km of shoreline and marine waters from Cambérène to the north, to the Somone estuary to the south. The peninsula itself hosts the city of Dakar, the capital of Senegal, and its suburbs. Dakar has a major harbor and holds most of Senegal's industrial capacity.

The Cap Vert peninsula is the result of a series of volcanic outcrops that jut into the ocean, creating a jagged rocky shoreline with several islands, Île de Teuguène, Île de Ngor, Îles de la Madeleine, Île de Gorée. The Island of Gorée has a troubled history as a slave-trading center and is now registered as a World Heritage site. Two capes mark the tip of the peninsula: the Pointe of the Almadies to the North and the Cap Manuel to the South. Part of the coast is made of steep cliffs, most particularly around the Mammelles, and the Cap Manuel.

The rocky outcrops separate the coastal sand dunes of the north (the Grande-Cote) where the sea is often rough, particularly during the winter months, from the Baie de Hann to the south, which is sheltered from the trade winds. Further south, the shoreline consists of a succession of capes and bay beaches, cut by a series of small lagoons (Bargny, Yenne, Popenguine, Somone) supplied by freshwater runoff originating from the Thiès lateritic plateau. This shoreline is low except around Popenguine where the plateau reaches the coast at Cap Naze.

The coastline is bordered by a continental shelf that is narrow around the Cap Vert peninsula, but widens to

the South.

Ecosystem

The Cap Vert Peninsula is a renowned fishing area for several reasons: i) the upwelling, which is particularly strong along the coast north of the peninsula, boosts primary productivity in surface and subsurface waters, ii) the rocky shores of the peninsula provide a habitat that is not found elsewhere along the coast, iii) the sheltered shallow waters of the Baie de Hann constitute a major breeding and nursery ground for coastal fish resources, including *Sardinella* sp..

Mangroves that played an important role as nursery grounds for several marine species including shrimps colonized many of the lagoons south of Dakar. The lagoons are also important staging areas for palearctic migratory birds.

Local values

The Cap-Vert peninsula was historically inhabited by the Lebou. The Lebou retain a strong presence in the fishing communities of the Cap Vert Peninsula such as Yoff, Ngor, Ouakam, Soumbédioune, Hann, Thiaroye, Rufisque and Bargny. Fishing has remained a major activity of the Lebou, but agriculture is also practiced during the rainy season.

The Cap Vert Peninsula is the object of a diversity of myths and legends involving local divinities that protect Lebou fishers; Njaré for Teuguène Island; Dek Daour for the Madeleines Islands; Kumba Castel for Gorée, Kumba Lamb for Rufisque and Kumba Cupaam for the Cape Naze. Holy sites of major cultural significance to the Lebou people dot the coastline from Yoff to Bargny.

Major threats

The proximity of a large city with major industries constitutes a primary threat to the peninsula's coastal and marine biodiversity. Most of Dakar's sewerage and industrial effluent is discharged into the ocean. The impact is most pronounced in the Baie de Hann because it is sheltered and shallow. Eutrophication of stretches of the Bay could already have reduced fish production by 30%, although a reliable estimate has never been established. The threat will in part be mitigated by the ongoing Long Term Water Supply Project funded by the World Bank, which will finance the construction of sewerage treatment plants.

The other major constraint is overfishing for commercial purposes. The current regulatory regime favors open access and discourages local co-management initiatives. As a result, none of the constraints and rules that applied in the past and promoted sustainable fishing remain.

Destructive fishing practices have increased over the years. They are most prevalent around Gorée, the Île de la Madeleine National Park, and off Ouakam. They include the use of dynamite and the use of oxygen bottles for underwater fishing.

Finally, the small lagoons south of Dakar are heavily degraded because of small dams built on the slopes of the Thiès Plateau to retain runoff waters. The decrease in water flow has increased salinity in the lagoons and in most cases resulted in a closure of the lagoon mouths and thus loss of access to the sea. Uncontrolled tourism and development has also increased the amount of waste entering these lagoons.

Protected areas within the site

Conservation efforts in the Cap Vert peninsula have up until now addressed narrow concerns. For example, the driving concern in creating the Parc national des Îles de la Madeleine was the protection of its nesting Tropicbirds. The GIRMaC will be the first effort to survey, manage and monitor the peninsula's coastal resources as an ecosystem. The objective of the GIRMaC is to trigger a debate and dialogue amongst stakeholders that will increase awareness of the crisis and result in measures that can be implemented to sustainably manage coastal biodiversity.

The main focal areas for this effort will be:

- Parc national des Îles de la Madeleine
- Réserve de Poponguine
- Réserve Naturelle communautaire de la Somone
- Réserve Naturelle Communautaire de Teuguène (Île de Yoff)
- Île de Gorée

2.1. *Parc National des Îles de la Madeleine (PNIM)*

(Established as a Gazetted Forest in 1949, and as a National Park on 16 January 1976)

Location: 14°39' N, 17°28' W. Two islands 3.6 km West of Dakar.

Area: 450 hectares

Description: The Park comprises a volcanic island of 15 ha and several rocky outcrops. The eastern side of the main island consist of 35 m high cliffs, while the western side large basaltic blocks, several deep pools and sheltered coves.

Flora: More than 100 species of plants have been observed, including *Cissus quadangullaris*, *Euphorbia sp.* and *Adenium obesum*. The top of the cliffs is mainly covered by *Andropogon gayanus*, which was introduced by earlier inhabitants.

Fauna: The Park holds a nesting colony (50-100 pairs) of Red-billed Tropic birds, *Phaeton aethereus mesonauta*, one of only 3 known nesting sites, and a nesting colony of 200 Common Cormorant, *Phalacrocorax carbo*. It is also constitutes a significant wintering area for Gannets, *Sula bassana*, and Ospreys, *Pandion haliaetus*.

The area is also a major passage point for pelagic birds, including skuas, Storm Petrels and Shearwaters.

The Park preserves one of the only samples of a rocky shoreline South of Morocco, including small areas of corals. The marine fauna is very rich in species and numbers, including fish species rarely found elsewhere along the coast, such as *Ophiblenius atlanticus*, *Parablennius goreensis*, Monrovia Doctorfish, *Acanthurus monroviae*, Beaugregory Damsel fish, *Eupomacentrus leustictus*, Honeycomb Moray Eel, *Muraena melanotis*, Red-banded Seabream, *Pagrus auriga*, Guinean Parrotfish, *Scarus hoefleri*, the Guinean Burrfish, *Chilomycterus spinosus*, Bream, *Diplodus sp.* and Spanish Hogfish, *Bodianus speciosus*, as well as Mollusks such as *Bursa pustitoda*, *Hexaplex duplex*, and *Natica* species, and Shellfish such as the Green Lobster, *Palinurus regius*.

Threats: The main threat is the absence of an explicit agreement with neighboring fishing communities relative to the Park's purpose. As a result, only the core of the Park

is effectively protected.

Fish resources within the park are heavily coveted because the surrounding waters are extensively overfished. The concentration of fish within the park has led certain groups of fishermen to use explosives. Furthermore, park personnel have not been able to stop deep-sea fishing within the park by “tourists”.

Another significant threat is the decrease in operational funds by more than 70% during this last decade, which has made it impossible for Park personnel to protect and monitor the Park.

Management: The first priority is a systematic survey of the fish fauna to determine species composition and trends. The second priority is to reach an agreement with neighboring fisher communities, to sustainably manage the ecosystem within which the park is located.

A management plan is under preparation with support from GTZ. IUCN, with a financial support of the Kingdom of the Netherlands, has helped organize the participation of local organizations in the management of the Park, in partnership with the Senegalese Association of the Friends of Nature (ASAN).

Other: The park hosts several archaeological sites with various proto-historical remains such as ceramics, tools or bones.

2.2. *Réserve naturelle de Popenguine*

(Established as Gazetted Forest on 7 November 1936 and as a Nature Reserve on 24 May 1986)

Location: 14°53 N, 17°06 W, on the coast approximately 60 km south of Dakar.

Area: 1009 ha of land, and 100 ha marine.

Description: The terrestrial part is characterized by a relatively chaotic outline, with hills of sandstone and limestone, culminating in a 74 meter high cliff. The hills are capped with laterite and are unsuited for agriculture.

The rocky formations extend into the ocean, forming a distinct microhabitat for marine species.

A seasonal lagoon is located at the foot of the cliff and constitutes the only source of freshwater in the reserve.

Flora: Secondary Sahelian vegetation composed of thorny bushes, including *Acacia nilotica*, *Prosopis juliflora*, baobab, *Adansonia digitata* and some Combretaceae.

Fauna: The original purpose of the reserve was to protect the wintering site of the rare Blue Rock-Thrush, *Monticola solitarius*, and to shelter other migratory passerines that follow the Atlantic coast of West Africa.

Protection has also allowed the return of native mammal species such as the Bushbuck, *Tragelaphus scriptus*, the Forest Duiker, *Cephalophus grimmia*, the Vervet Monkey, *Cercopithecus aethiops*, the Spotted Hyena, *Crocuta crocuta*, Golden Jackal, *Canis aureus*, the Striped Polecat, *Ictonyx striatus* and the Civet, *Viverra civetta*.

Lastly, the reserve holds *Python sebae* and the Monitor Lizard, *Varanus niloticus*.

Threats: The main threat is that an increase in biodiversity will attract poachers from outside the local communities.

Management: The Popenguine reserve was the test bench for the co-management of biodiversity in Senegal. Most important, the thrust for sustainable management came from a collective of 8 women’s associations. It constitutes a rare example of voluntary

participation of neighboring populations in the management of a protected area. The marine portion of the reserve has never been managed and there has been no inventory of marine species. Ultimately, the future of this portion will depend on the adoption of sustainable management practices by local fishers.

2.3. Réserve de la Somone

Location: Somone is situated 60 km south of Dakar.

Area: 700 hectares

Description: The area is located around the small coastal basin of Somone River that runs down from Thiès and Ndiass plateau to the sea.

Flora: *Rhizophora* sp. mangrove tree have been successfully replanted.

Fauna: Mainly oysters and shrimp. It is also a significant stopping area for shorebirds and waterfowl.

Threats: The main threat is the capture of runoff into the Somone River for the purposes of agriculture and tourism. As a result runoff has become too little to sustain ecological functions in the estuary and the lack of water flow has been insufficient to maintain an open access to the sea and has resulted in hyper-salinity in the estuary.

The second threat is uncontrolled residential development on the shores of the estuary, leading to destruction or degradation of critical mangrove habitat.

Management: Women groups begun to rehabilitate degraded mangrove ecosystems in 1995 leading to an increase of shrimp catches by fishermen of surrounding villages. Therefore the rural council enacted the creation of the community natural reserve of Somone in 1999.

2.4. Réserve naturelle communautaire de Teuguène (Île de Yoff)

Teuguène is a small island off of the village of Yoff, on the northern side of the Cap Vert peninsula. It is a key cultural and religious site for the Lebou people of Yoff. It is uninhabited and protected by an 8 m high cliff. The island itself is barren, but the surrounding seas are biologically rich and have benefited from protection measures implemented by the traditional Lebou social structure. Teuguène has been registered as a Community Nature Reserve under Senegalese law, and a proposal has been submitted to UNESCO to designate it as a Biosphere Reserve.

2.5. Island of Gorée

The island of Gorée lies off the coast of Senegal, opposite Dakar. From the 15th to the 19th century, it was the largest slave-trading center on the African coast. Ruled in succession by the Portuguese, Dutch, English and French, its architecture is characterized by the contrast between the grim slave-quarters and the elegant houses of the slave traders. Today it continues to serve as a reminder of human exploitation and as a sanctuary for reconciliation.

The waters around Gorée are shallow, sheltered and rocky. They constitute the most accessible and striking example of the fish community of the Cap Vert Peninsula.

3. Saloum River Delta Biosphere Reserve

Description

The Saloum River drains a watershed of approximately 30,000 km², including the Sine River watershed. The delta starts west of Kaolack, and extends from Joal-Fadiouth to the north, to the border with The Gambia to the South, an area of approximately 5,000 km². It includes three distinct habitats: mangrove, tidal mudflats and marine.

The mangrove is located within three groups of islands covering approximately 800 km², the Gandoun islands to the north, and the Bétanti and Fathala islands to the south. These island groups are separated by three main tributaries; the Saloum, the Diombos and the Bandiala.

The mangrove area is further broken up by a dense network of small tidal channels or bolons. Each bolon is characteristically bordered up to the limits of daily tidal flooding by a gallery of tall White Mangrove, *Laguncularia racemosa*. This external part of the mangrove traps sediments and constitutes a shelter against waves. Inside the gallery up to the mean limits of inundation by spring tides are found woodlands of Black Mangrove, *Avicennia africana*. Red Mangrove, *Rhizophora mangle* and *R. harrisonii*, occur at the boundary between White and Black Mangrove. The Button Mangrove, *Conocarpus erectus*, grows just above the high tide line. Typically, *Sesuvium portulacastrum* and *Paspalum vaginatum* form a carpet under the Black Mangrove.

The White Mangrove appears to be the pioneer species, being replaced later on by Black Mangrove until the soil is raised by the trapped sediments and becomes too arid to support vegetation during the dry season, thus constituting salty barren flats called “tannes”. These tannes are colonized by salt resistant grasses such as *Andropogon gayanus*, *Sporobolus robustus* and *Sphaeranthus senegalensis* (which produces a potent anti-inflammatory), and by trees such as *Tamarix senegalensis*, *Adansonia digitata*. Higher ground is colonized by the African Oil Palm, *Elaeis guineensis*.

The extent of tannes is much greater in the northern part of the delta, an area that is subjected to the yearly floods of the Saloum River. In contrast, the inflow of fresh water is much more limited in the South where the mangrove forest is more extensive and denser.

The northern part of the Saloum estuary is protected from the Atlantic Ocean by a sand spit, which stretches from Palmarin to the North to Sangomar to the South. This spit has repeatedly been breached by the Ocean during spring tides, but has always reconstituted itself.

The second major habitat consists of tidal mudflats totalling several thousand hectares.

The marine portion is shallow and soft-bottomed. It also includes several sand bars and small sandy islands that shift from year to year.

Ecosystem

The Saloum River Delta constitutes a critical breeding and nursery ground for several economically

important fish species, most particularly the Madeiran Sardinella, *Sardinella maderensis*. The fish population in the estuarine complex comprises 114 species, which is a relatively high specific richness when compared with other estuaries; 39% of fish species reproduce in the estuary; 85% of the fish found in the estuary are juveniles.

Mangrove are critical to many of these species. For example, shrimp production is directly linked to the area of mangrove. Overall biomass production is estimated at approximately 160,000 tons per year, including 30,000 to 50,000 tons of fish.

The mangrove forest supports an extensive coastal food web, including invertebrates, shellfish such as the Fiddler crab, *Uca pugnax*, and provides prime nesting and wintering habitat for hundreds of bird species.

Wintering palearctic shorebirds are attracted by the abundant invertebrates and shellfish available during low tide on the mudflats. Certain species roost in the mangrove while others gather on the sandy islands offshore.

The abundance of fish attracts dolphins, pelicans, herons and egrets, Ospreys and African Fish Eagles. The fish nursery grounds are exploited by nesting gulls and terns.

Large expanses of sea grasses attract sea turtles and sustain a population of African Manatees.

Threats

The main threat is the tense coexistence between conservation efforts and local populations. Local populations see conservation as restricting their livelihoods rather than as an instrument to make their livelihoods more sustainable.

Furthermore, the current regime for regulating fisheries has hindered the local initiatives to restrict access to fish resources to increase their sustainability. On the contrary, Government has financed the creation of new landing sites (Djifër and Missira) that further opened the fisheries and have promoted overfishing.

In addition to directly affecting fisher populations, the reduction in fish abundance affects fish eating dolphins, and fish eating birds.

A major source of conflict is the collection of shellfish such as Mangrove Oysters, *Crassostrea gasar*, and Arkshell. Mangrove Oysters grow on the roots of White and Red Mangrove trees. The main mode of collection is to cut off chunks of the roots, thus gradually destroying the mangrove. The impact of this activity has become more serious with increased opportunities to commercialize them for consumption in urban areas.

Protected areas within the site

Most of the proposed pilot site is comprised within the Saloum Delta Biosphere Reserve. The maritime portion of the delta is almost entirely included in the Parc national du delta du Saloum, while the northwestern portion is covered by the Réserve naturelle communautaire de Palmarin.

The Saloum Delta National Park shares a border with the Niomi National Park in The Gambia. Recently, there have been agreements relative to the common management of these two national parks.

3.1. *Parc National du Delta du Saloum*

(Created on 28 May 1976; Designated Ramsar site Senegal 1SN003 on 3 April 1984)

Location: 13°37' N, 16°42' W, 80 km West of Kaolack, on the border with Gambia on the Atlantic coast.

Area: 73,000 hectares

Description: The Park includes all of the marine habitat of the Saloum River delta as well as some of its mudflats and mangrove. It also includes the Fathala Forest, a dry forest.

Flora: The dominant habitat is mangrove forest, including *Laguncularia racemosa*, *Rhizophora mangle*, *R. harrisonii*, and *Avicennia nitida*.

Fauna: The Park is a breeding site for at least 3 species of sea turtles: Olive Ridley, *Lepidochelys olivacea*, Loggerhead, *Caretta caretta*, and Green Turtle, *Chelonia mydas*.

The Park is a major wintering ground for approximately 100,000 palearctic shorebirds, including Curlew, *Numenius arquatus*, Bar-tailed Godwit, *Limosa lapponica*, Redshank, *Tringa tetanus*.

Several species of gulls and terns nest in large numbers on several small sandy islands, most particularly the Île aux oiseaux.

The delta is an important site for dolphins, most particularly the Recent observations of cetaceans have noted the presence of Cameroon River Dolphin, *Sousa teuszii*, the Bottle Nosed Dolphin, *Tursiops truncatus*, the Common Dolphin, *Delphinus delphis*, and spotted dolphins, *Stenella* sp..

The Park is the main site in Senegal for the African Manatee, *Trichechus senegalensis*.

The terrestrial part of the Park holds several mammals at the limit of their natural distribution such as the Bohor reedbeek, *Redunca redunca*, and the Clawless Otter, *Aonyx capensis*.

Threats: The main threat and problem has its roots in the authoritarian manner in which the park was created, without consultations with local populations. As a result, innumerable conflicts subsists concerning the use of resources, and no agreement has been reached with local populations to participate in the conservation of biodiversity in the park. The main issues that require attention are: i) the gathering of shellfish in mudflats, ii) the collection of oysters in mangroves, iii) harvesting eggs from birds and sea turtles nests, iv) fishing sharks for their fins, v) hunting of manatee and sea turtles, vi) the use of beach seines in the park. These activities constitute a real threat to the ecological balance of the region if not organised in a rational way.

Management: IUCN has helped prepared a management plan for the Saloum delta Biosphere Reserve, including the Park. Several institutional and regulatory issues remain to be resolved to allow full implementation of the plan.

Tourism: Almost 1,000 visitors per year.

3.2. *Réserve naturelle communautaire de Palmarin*

Location: It is enclosed between 14°00 N, 16°30 W, extending from the Atlantic to Fimla to the West. It matches the Communauté Rurale (CR) of Palmarin in the Fatick Region, including the villages of Ngallou, Sessène, Nguéthi, Ngounoumane, Diakhanor, as well as the Djifèr fisher camp.

Area: 77,000 hectares

Description: The Reserve is within the northern half of the Saloum River Delta. The land is exceptionally flat and consists mainly of seasonally flooded saltpans or mangrove forest. Extensive tidal mudflats line the banks of the Saloum River and its bolons. Approximately 12% of the land is suitable for agriculture.

Flora: A low mangrove of *Avicennia nitida* covers approximately 40% of the area. There are clumps of trees on higher ground, including *Borassus aethiopicum*, *Elaeis guineensis*, *Detarium guineensis*, *Dialium guineensis*, the Senegal Date Palm, *Phoenix reclinata*, *Adansonia digitata*, *Tamarindus indica*, *Ziziphus mauritiana*, and *Z. mucronata*.

Fauna: The Reserve is a major wintering site for palearctic shorebirds, most notably the Avocet, the Curlew sandpiper, *Calidris ferruginae*, and the Little Stint, *Calidris minuta*. It is also a resting area for African water birds such as flamingos, the Pink Pelican, *Pelecanus rufescens*, the Senegal Jabiru, *Ephippiorhynchus senegalensis*, the African Spoonbill, *Platalea alba*, and various ibises. The coast between Palmarin and Joal-Fadiouth is an important sea turtle feeding and nesting area.

Threats: The biggest threat is the poaching of protected species, most particularly sea turtles, and to a lesser extent African Manatee. Tourism development along beaches also constitutes a serious threat to sea turtle reproduction.

The second most important threat to biodiversity is the unregulated and unmanaged fisheries of Djifèr.

Another significant threat is the destruction of forest cover for commercial purposes.

Management: The Palmarin Rural Community has defined a strategy of restoring forest groves through reforestation and sustainable management of resources through co-management.

Tourism: The Reserve already has small-scale tourist infrastructure, in the form of various inns and lodges.

**Additional GEF Annex 5: Ongoing Projects and Programs in the Coastal Zone of Senegal
SENEGAL: Integrated Coastal and Marine Resource Management**

A. Fisheries Sector

Description	Donor	Executing Agency	Objectives	Activities	Area of Intervention	Lifetime
Evaluation and management study of Senegal Fisheries Sector	JICA	DPM/CRODT	<ul style="list-style-type: none"> ● Knowledge of the status of fish stocks ● Preparation of fisheries sector management plan. ● Technology transfer to Senegalese counterpart 	<ul style="list-style-type: none"> ● Realize a sampling plan by trawling at sea ● Improve on ground statistics collection method ● Evaluate fisheries sector ● Set up pilots projects ● Elaborate management plans 	EEZ and coastal fishermen villages	June 2003/ Sept. 2006
Development of Grande Cote landing sites	AFD 2,24 billion FCFA	MEF DPM/MP	Improvement of traditional fishing unloading conditions	<ul style="list-style-type: none"> ● Improve leaving conditions in sites ● Make convenient fishing centers ● Create development pole 	6 sites: Hann, Yoff Kayar, Fass Boye, Goxou Mbath, Nguet Ndar	1998 - 2002
Kayar fishing complex	JICA 470 millions yens	DPM/MP	Improvement of traditional fishing unloading conditions	<ul style="list-style-type: none"> ● Develop 2 fishing wharfs, 1 conditioning area and offices 	Kayar	Completed
Kaolack main fish market	JICA	DPM/MP	Population food safety contribution	<ul style="list-style-type: none"> ● Improve the hygiene, quality and distribution of products ● Increase the volume of fresh fish 	Kaolack	Already completed. Opening planned end of year 2003
Lompoul Fishing Center	JICA 499 millions yens	DPM/MP	Improvement of traditional fishing unloading conditions	<ul style="list-style-type: none"> ● Build a landing stage ● Develop 2 traditional conditioning areas ● Put in place preservation, conditioning, stocking and marketing facilities for fishing products 	Lompoul	-
Traditional Fishing Support Program in southern Senegal (PAPA-SUD)	FED-AFD 5,1 billion FCFA	DPM/MP	Support to traditional fishing channels for a sustainable development.	<ul style="list-style-type: none"> ● Develop coastal areas ● Support resources management ● Reinforce professional organizations 	12 sites (From the Petite Côte to Casamance)	Up to 2005

				<ul style="list-style-type: none"> capacities ● Support the development of fish products ● Train beneficiaries 		
Sustainable Fisheries Livelihood Program (PMEDR)	DFID/R.U (FAO) 35 millions \$US	MP	Reduce poverty of coastal communities by improving livelihoods	<ul style="list-style-type: none"> ● Build awareness and train on MED approach ● Study impact of policies on community MED ● Finance small projects ● Popularize MED approach 	25 sub-saharan countries	Ongoing
« Narou Euleuk »	FFEM	Océanium	Preserve fish resources through the establishment of MPAs and public awareness	<ul style="list-style-type: none"> ● Establish MPAs ● Build awareness in fishermen 	Sine-Saloum, Rufisque, Bargny, Mbour	Ongoing
Support to women entrepreneurs for artisanal transformation of fish products	ONUDI US\$521,000	ONUDI/DM P in partnership with ITA/ACA	Economic development through capacity building in fish transformation micro-enterprises	<ul style="list-style-type: none"> ● Identify pilot sites ● Provide materials and equipment ● Train and teach reading and writing 	Kayar, Yoff, Bargny	2000-2002 2003 consolidation and preparation second phase
Submersion of artificial reefs	OFCA/Japon US\$490,000	DPM/CROD T	Maintain and increase fish resources along Senegal's coast	<ul style="list-style-type: none"> ● Submerge artificial reefs ● Establish MCS committees 	Rufisque/Bargny	2002-2003
Aménagement quai de pêche de Thiaroye	BCI 483 millions	MP	Construction of fish landing infrastructures for artisanal fisheries	<ul style="list-style-type: none"> ● Improve landing sites ● Build temporary shelters ● Sanitation and road works 	Thiaroye	Ongoing
Aménagement du quai de débarquement Ouakam	BCI	MEF MP/DPM		<ul style="list-style-type: none"> ● Improve landing sites ● Sanitation works 	Ouakam	Completed
Aménagement d'aires de transformation artisanale	BCI 835 millions FCFA	MP		<ul style="list-style-type: none"> ● Improve artisanal fish transformation sites ● Sanitation works 	Diamniadio, Thiaroye, Potou et Dionewar	Ongoing
Appui à la gestion durable et paritaire du secteur de la pêche	FAC approximatel y200 million FCFA	MP/CEP	Sustainable management of the fisheries sector	<ul style="list-style-type: none"> ● Establishment of local fisheries councils ● Support to a task force working on a system of fishing right concessions ● Audit of Senegalese registered vessels ● Census of "pirogues" ● BCPH training 	30 sites	Ongoing
Stratégie	Government	MEF/MP/CE	● Ensure sustainable	● Develop and	Fisheries sector	Ongoing

sectorielle réduction pauvreté (DSRP)	of Senegal 29 billion FCFA	P	management and rehabilitation of fish resources <ul style="list-style-type: none"> ● Satisfy national demand for fish products ● Commercialize fish products ● Improve qualifications of fisheries sector professionals 	implement multi-year fisheries management plans <ul style="list-style-type: none"> ● Strengthen the capacity of communities to comanage fisheries ● Support the establishment of local fisheries councils ● Create and manage MPAs ● Build commercialization infrastructures ● Train fisheries sector professionals ● Support training institutions 		
Emergency recovery plan for the fisheries sector	FAO/BAD 787 million FCFA for the preparation phase	MP	<ul style="list-style-type: none"> ● Management of fishing areas for a rational use of resources ● Feasibility study of projects or strategic options for the sustainable development of fisheries and aquaculture 	<ul style="list-style-type: none"> ● Support the development and implementation of a fisheries management system ● Conduct complementary studies ● Analyze conditions for the development of aquaculture ● Strengthen the management of the recovery plan ● Elaborate local environmental action plans ● Build the capacity of institutions responsible for fisheries management 	EEZ and coastal area	Under preparation
Integrated Framework développement du commerce extérieur du Sénégal	Integrated Framework	MCPME MP	Examine constraints to export markets	<ul style="list-style-type: none"> ● Ensure sustainable development of fisheries ● Support restructuring of fisheries sector ● Reduce artisanal and industrial fleets ● Rationalize fish product transformation 	Fisheries sector	2001-2003
Protection and management of fish resources	Swiss Aid 100 million FCFA	Ports-systems FENAGIE	Physical and computer registration of "pirogues"	<ul style="list-style-type: none"> ● Registration ● Computerization ● Collection of statistics 	Hann, Rufisque, Kayar.	from 2002

Coopération espagnole		MP	<ul style="list-style-type: none"> ● Surveillance ● Refrigeration ● Land use planning in Langue de Barbarie 		Langue de Barbarie	Ongoing
Regional Program for the Conservation of the Coastal and marine Zone in West Africa (PRCM)	WWF, UICN, FIBA, Wetlands International		<ul style="list-style-type: none"> ● Creation and co-management of MPAs ● Conservation and management of habitats and species ● MPA contribution to ecotourism ● Assessment of long term changes in the coastal environment of West Africa ● Communication 	<ul style="list-style-type: none"> ● Establish dialogue and decision meeting processes ● Establish community funds ● Propose alternative socioeconomic and cultural development models ● Define rules for the sustainable use of resources ● Improve the added value of fish resources ● Develop ecotourism ● Disseminate successful participatory management experiences 	Mauritania, Senegal, The Gambia, Guinea Bissau, Cape Verde Guinea	2004-2008
WWF Marine Program for West Africa	WWF WAMER 1 million Euros	WWF	<ul style="list-style-type: none"> ● Conservation of marine biodiversity and ecological processes in coastal and marine habitats ● Sustainable management and fair utilization of marine resources 	<ul style="list-style-type: none"> ● Strengthen MPA network ● Promote co-management and local management plans ● Promote fair fishing agreements ● Prepare a regional plan for the conservation of sea turtles ● Develop a communication plan 	Mauritania, Senegal, The Gambia, Guinea Bissau, Cape Verde Guinea	2002-2005
Regional Support Program for the Promotion of responsible fisheries in CRSP countries (PARPPRES)		Sub-regional fisheries Commission (CRSP)	<ul style="list-style-type: none"> ● Establishment of a joint policy for controlling access and allocating fishing rights ● Sustainable management of shared fisheries ● Conservation and protection of fish resources and of coastal marine ecosystems 	<ul style="list-style-type: none"> ● Harmonize and optimize national surveillance capacity in member countries ● Prepare and implement management plans for shared fisheries ● Support research ● Integrate MPA in sustainable fisheries strategy 	CRSP countries: Mauritania, Senegal, The Gambia, Guinea Bissau Cape Verde Guinea	Under preparation

B. Forestry Sector

Programme de Gestion Intégré des Ecosystèmes Sénégalais (PGIES)	UNDP	MEA	Sustainable and participative conservation of biodiversity in four pilot sites, through sustainable use of resources and equitable sharing of benefits		Niokolo Koba NP Ferlo Gueumbeul Saloum Delta NP	Ongoing
Projet Auto promotion et Gestion des Ressources Naturelles au Sine Saloum (PAGERNA)		MEA	Community based sustainable management of natural resources and poverty reduction in the Saloum natural region.		Saloum region	Ongoing
Support Project to Farmer Entrepreneurs (PAEP)	CIDA	MEA	Sustainable economic development in the Niayes	Plant trees on 2037 ha of sand dunes along the coast in Thiès and Louga regions, to safeguard 98 depressions for garden farming.		
Projet de Reboisement dans la zone du Littoral (PRL)		MEA	Help rehabilitate the Niaye Restoration Perimeter, through sand dune fixation.	Plant 2037 ha of coastal sand dunes over 10 years, in the Thiès and Louga regions, to protect 98 depressions used for garden farming.		
Projet de Gestion Durable de la Mangrove de la Petite Côte et du Delta du Saloum			Sustainable management of mangroves in the Petite Côte and Saloum Delta	<ul style="list-style-type: none"> ● Prepare sustainable management plans for the mangroves of the Petite Côte and Saloum Delta, using an ecosystem approach and taking into account forestry, fisheries, tourism, coastal and erosion. ● Implement pilot projects to strengthen capacity of local stakeholders ● Technology transfer to Senegalese counterparts through on the job training. 		

C. Environment and Conservation Sector (DPN)

Projet d'appui institutionnel au secteur de l'environnement au Sénégal	Netherlands	DPN	Strengthen capacity of the Ministry of Environment to analyze and implement	<ul style="list-style-type: none"> ● Support Ministry to work with populations, private sector and the international community to reduce industrial risks and pollutions ● Support the DPN to conserve 2 protected areas, by involving local populations, preserving biodiversity, and reorganizing the institutional framework. 		
Gestion communautaire de la mangrove de la RBDS (WAAME, ADG (Belgique), DPN)	African Development Foundation	DPN	<ul style="list-style-type: none"> ● Preservation of mangroves by local communities ● Development of socioeconomic alternatives 	<ul style="list-style-type: none"> ● Train communities in to sustainably use mangrove resources ● Train and support CBOs in aquaculture and value adding activities ● Promote environmental education 		
	GTZ	DPN				
	UICN	DPN				
	France					
	Belgique					

Project	Project Characteristics	Environmental significance of Project
<i>Fishing Project</i> : support to fishermen groups at Fatick	African Development Foundation 130 millions CFA	<ul style="list-style-type: none"> ● Improving conservation. ● Transformation and commercialization. ● Equipment
<i>Mangrove Regeneration Project on Saloum Islands</i>	African Development Foundation 80 millions CFA (currently being negotiated).	Support from an NGO, WAAME (West African Association for Marine Environment).
<i>Community Patrimony Project</i> Teunguène Island - Yoff	<ul style="list-style-type: none"> ● Wetlands International and the Nicolas Hulot Foundation. ● 50,000 FF grant from the Foundation for the Teunguène - Yoff project. ● 100,000 FF grant from the Foundation for all of their projects in Senegal related to community patrimony. 	<ul style="list-style-type: none"> ● Publication that defines the protection measures for the island. ● Public meetings to improve the management of waste and for the construction of a sewerage system. ● Research concerning the presence of mollusks. ● Documentation of flora and fauna starting with information from oral tradition.
Somone Lagoon	Idem	Rehabilitation of mangroves adjacent to Kër Cupaam and Popenguin Special Reserve.
Gandiolais Lagoon	idem	Study underway on the role of this habitat located near the Gueumbeul Special Fauna Reserve and the Langue de Barbarie National Park.
<i>PROPÊCHE Project</i>	CIDA Canada 14 millions \$ CDN Implementation by Dessau et DID, final phase.	<ul style="list-style-type: none"> ● Promotion of fishing. ● Improvement of artisanal fishing techniques. ● Installation of a shipyard at Mbour for the production of dugouts.
<i>PAEP Project</i> : support for farmer entrepreneurship/ Niayes	<ul style="list-style-type: none"> ● CIDA Canada 7 millions \$ CDN ● Management restricted to DEFCCS and the development of garden farming at Centre Canadien d'Étude et de Coopération Internationale (CECI). ● Currently being developed. 	<p>Management of forest strips for sand dune fixation.</p> <p>Garden farming development.</p>

**Additional GEF Annex 6: Issues requiring donor coordination
SENEGAL: Integrated Coastal and Marine Resource Management**

Key issue to be addressed	Potential donors	Critical areas of overlap with the project	Key areas of agreement sought from donors and Government
Establishment of TURFs as main tool for coastal management	All	TURFs are essential for project design	Establishment of TURFs for management of coastal fisheries and biodiversity
Nature and scope of reconversion activities	Japan, EU, AfDB, FAO	Reduction of Industrial and artisanal fisheries	Nature of support, approach to reach political acceptance on level of reduction and compensation
Recommendations of Special Commission	All	Many, particularly in the institutional and regulatory sphere	Blueprint of changes acceptable to Government, stakeholders and donors
Management plans and management system for industrial fisheries	FAO, DFID, Dutch, French, EU	Allocation of available fish resources among artisanal, industrial and foreign users	Basic allocation formula; nature of and other restrictions on fishing effort
How to strengthen MCS system and support its operations	Luxembourg, DFID, France, EU, Japan	Intrusion of industrial fisheries in artisanal areas	Nature of artisanal MCS activities, and coordination with industrial MCS operations
Development of research agenda and specification of activities of CRODT	Germany, EU, Japan, France, FAO	Integration of coastal zone research into overall research agenda; subcontracting of research, funding	Basic research agenda, funding and international cooperation arrangements
Creation of Trust Fund	All	Many	Principles of operation of the fund; eligible activities, projected donor support
Address processing overcapacity and strengthen quality control	FAO, France, Spain, EU, Japan	Improving value added and product competitiveness; enhance international marketing strategies	Future system of licensing processing plants; active or passive attrition of capacity; support for quality control improvement
Develop investment program and funding arrangements for fisheries related infrastructure	Japan, EU, AfDB, WB, France,	Fisheries infrastructure and facilities must be adjusted to changing fishing patterns	Agreement on nature of future infrastructure investment, and level of future financial support
Regional Cooperation	France, EU, FAO, DFID, Luxembourg	Many	Specific activities of regional commission, and funding of its activities.
Artisanal fleet registration	DFID, France, FAO	Necessary for coastal zone management	Type of registration, approach to reach fishermen consensus, regular updating of system

Additional GEF Annex 7: Detailed Project Description
SENEGAL: Integrated Coastal and Marine Resource Management

Project components

The project will comprise three components:

1. Development of sustainable fisheries
2. Conservation of critical habitats and species
3. Program Management, including monitoring and evaluation (M&E) and communication

The estimated cost of the program is US\$17 million, of which IDA would fund US\$10 million, GEF would fund US\$5 million, and the Government of Senegal would fund US\$ 2 million.

Project Component 1: Development of Sustainable Fisheries (US\$ 8.1 million)

The purpose of this component is to increase the sustainability of fisheries through the use of area-based comanagement. The component would include 5 sub-components.

Table 1. Preliminary Project Costs of Component 1 (US\$ 8.1 million)

Project Sub-component	Investment Costs	Operational Costs	TA/Training
<i>1.1 Area-Based Co-management</i>			
* Saloum River Delta	0.8	0.8	0.4
* Cap Vert Peninsula	0.4	0.4	0.2
* Senegal River Delta	0.7	0.6	0.2
<i>1.2 Fisheries Management Plans</i>	0.2	0.6	0.2
<i>1.3 Strengthening the Ministry of Fisheries</i>	0.3	0.3	0.6
<i>1.4 Evaluation of Fish Resources</i>	1.0		0.2
<i>1.5 Fisheries Management Fund</i>			0.2
TOTAL	3.4	2.7	2.0

Sub-Component 1.1: Area-based co-management of fisheries (US\$4.5 million)

The objective of the sub-component is for the majority of local fisheries to be managed through TURFs by the end of the Project within three pilot areas: i) the Saloum Biosphere Reserve, ii) the area of the future Senegal River Delta Biosphere Reserve, and iii) the Cap Vert Peninsula. The TURFs in the Cap Vert peninsula would be linked to exiting protected areas.

The TURFs may target a single species, or more often a group of species that are caught by similar vessels and gear. Most TURFs would cover a clearly delineated area. However, TURFs dealing with migrating species may extend over large areas and would require close cooperation between different

fishing communities. Fish resources allocated to industrial fisheries would be managed according to a different rights-based management system. Fish captures by industrial vessels would be prohibited within established TURFs.

The TURFs would bring a greater measure of local decision-making, within a framework of fisheries management at the national level. Each TURF would be managed by a TURF Committee comprising locally selected fishermen and elders.

The MoF would prepare prior to Project effectiveness a decree officializing TURF Committees and indicating their objectives. These objectives could include: a) resolving conflicts, notably the allocation of available quantities of fish among fishermen in a TURF area, b) preparing and implementing fisheries management plans, c) optimizing income from the sale, processing and marketing of fish products, and d) ensuring the long-term sustainability of fish resources.

The Project would provide resources to the MoF to support the establishment of TURFs by fielding qualified TURF facilitators and supporting access to services required for TURF operation. The facilitators would: i) inform fisher communities about the TURF process and objectives, by presenting demonstration videos or by organizing visits to existing area-based co-management initiatives, ii) explain the link between the TURF process, the management of ecosystems (Component 2) and the reconversion initiative (Component 3), iii) aid communities in identifying and delineating possible TURFs, using rapid appraisal tools, iv) help communities in registering TURF Committees as GIEs (Groupement d'intérêt économique), v) assist communities in establishing a list of user rights within the TURF, vi) draft a framework agreement between each TURF Committee and the MoF, as well as yearly performance plans, vii) develop a participatory fish stock evaluation program for TURF target species, viii) help the TURF Committee develop a Monitoring, Control and Surveillance Plan, ix) monitor TURF implementation and report to the MoF. As a rule of thumb, each facilitator would cover no more than 3 fishing communities. The facilitators would reside in the communities and their offices would also serve as information centers for the TURF Committees.

Each framework TURF agreement would spell out the obligations of the MoF and the TURF Committee, including:

- a) **User Rights.** The MoF would concede exclusive access rights to target fish species within the TURF area to registered TURF members. TURF boundaries would be finalized in collaboration with CRODT. The MoF would provide permanent marker buoys to indicate TURF boundaries. The TURF Committee would establish a register of users allowed to fish within the TURF, using an established set of principles that take into account equity, past activity and customary tenurial claims. The register would also indicate the type of vessel and gear for each user. Users would mark their vessels to facilitate recognition. TURF Committees would set the conditions that fishermen originating from outside the local community would have to meet to fish within the TURF.
- b) **TURF Management Plan.** The TURF Committee would prepare a plan for the sustainable management of the TURF that would set a target for the fishery. It plan would include measures to reduce fishing effort to allow fish stocks to reach and stay on target, including limits on the number of vessels, the type of gear, fishing sites, or fishing season.
- c) **Resource Assessment.** The MoF fisheries would contract CRODT to analyze data collected on target species by TURF members through the participatory fish stock evaluation program, and to conduct any further investigation required to determine the abundance and trend of these species, as required for TURF management. The results of these analysis and investigations would be shared with the TURF Committee.
- d) **Monitoring, Control and Surveillance (MCS).** The TURF Committee would develop a

Monitoring, Control and Surveillance Plan to ensure fulfillment of the TURF management objectives. MCS measures may include the monitoring of fish landings, the surveillance of the TURF area by fishermen, patrols by law enforcement officers, the application of bylaws developed by the TURF Committee, and procedures to call on formal MCS capacity when required (for example when an industrial vessel intrudes on the TURF).

- e) **Accompanying Measures.** The MoF would support the purchase of communication equipment and small boats, technical assistance and training, and operating expenses required for the establishment of the TURF, and for TURF operations.

Each TURF Committee would enter into annual performance contract with MoF that would: i) set the aggregate allowable catch for target species, and ii) specify how the aggregate catch is to be shared amongst registered users, iii) indicate the management measures to be taken to ensure that the catch does not exceed the aggregate allowable amount. The performance contract would also include a budget. Following TURF startup, the signature of such a contract would be a trigger for the release of funds to the TURF Committee.

The Project would test the TURF approach with 4 fishing communities during the first year (2 in the Saloum Delta and 2 in the Cap Vert Peninsula). The Project would then commission an independent study to assess the effectiveness and feasibility of the TURF concept, and recommend adjustments to the TURF design and implementation procedures in light of socio-cultural and economic conditions in different parts of the coast. Following the study, the number of intervention sites would be increased to 12. The number of intervention sites would again be increased following the mid-term review, to cover at least 50% of fisheries in the three pilot areas.

Sub-Component 1.2: Fisheries Management Plans (US\$1.0 million)

The proposed area-based co-management system would require a process at the national level to allocate fish resources to the different TURFs for each type of fisheries. The 1998 Fisheries Law empowers the Minister to commission the preparation of fisheries management plans. The project would support the preparation by the DPM of management plans for 5 key fisheries, in cooperation with CRODT. The list of key fisheries will be agreed with Government prior to Project Appraisal.

The Project would provide resources to the MoF to ensure that the CNCMP functions as the negotiation forum amongst stakeholders (including local fisheries committees such as TURF committees) for each of the 5 key fisheries, regarding the total allowable catch and fishing effort, necessary reductions in fishing capacity, and the nature of compensation for fishermen having to leave the sector. Resources would include operating expenses, secretariat services, specialized studies, startup and targeted TA, and training.

Sub-Component 1.3: Strengthening of the Ministry of Fisheries (US\$1.2 million)

The proposed area-based co-management system would also require capacity within the Ministry of Fisheries. The Project would support the establishment of a *Cellule opérationnelle de mise en oeuvre du Projet (COMO)* within the MoF to: i) oversee the implementation of TURFs, including studies on the effectiveness of TURF management and the functioning of the local MCS systems, ii) help the MoF adjust to the area-based co-management system, iii) provide support for the preparation and negotiation of international fisheries agreements. The extent of this support will be finalized prior to Project appraisal.

The MoF will also determine prior to appraisal: i) what measures (training, recruitment) are required to ensure that staff involved in the establishment and operation of TURFs have the professional skills and

experience required to implement the Project, ii) whether these staff will be directly responsible to the functional directorates in MoF (DPM, DPSP) or through the regional directorates.

Sub-Component 1.4: Evaluation of Fish Resources (US\$1.2 million)

The Project would provide resources to the MoF to contract CRODT to support the TURF management system, including the baseline assessments of key fish stocks, and the development of appropriate procedures to monitor and assess fish stocks. This sub-component would complement local research activities funded through Sub-component 1.1.

CRODT will be asked to prepare a proposal during project preparation to support the implementation of the TURF system, preferably with the support of FAO or another donor. CRODT would coordinate rather than execute every individual research activities, entering into cooperation agreements or arrangements for "contract" research with foreign research organizations, as well as local and foreign scientists. Research planning would fully incorporate the views of stakeholders, and reflect the research priorities defined at the national level in the fisheries management plans.

Sub-Component 1.5: Fisheries Management Fund (US\$0.2 million)

The long-term sustainability of the TURF system would require sustainable funding for fisheries management, research and MCS activities. Following the preparation of the Public Expenditure Review for the fisheries sector during Project preparation, the Project would support a follow up study that would assess the political, economic and institutional viability of establishing an independent source of funding for fisheries management, research and MCS activities at the local and national level. The study would assess the feasibility of mixed private/public funding of fisheries management, identify the instruments required to collect private and public support; the most suitable institutional structure of such fund, and how it should plan and execute its operations. The study would also evaluate the feasibility of using the fund as a disbursement channel for project funds in the last two years of Project implementation .

The Fund would most likely support the operations of the TURFs, MCS surveillance committees groups, Fisheries Councils, specific routine research activities that are essential for stock assessment and resources management purposes, and clearly defined national MCS activities. It would cover both operational budgets as well as capital investments.

If the study concludes for establishing such a Fund is feasible, the Project would support its creation with a combination of TA and training.

Project Component 2: Conservation of Critical Habitats and Species (US\$ 7.7 million)

The purpose of this component is to improve the long-term management of Senegal's network of coastal protected areas. This would be done by: i) developing and implementing management plans of these areas, according to an ecosystem approach, and ii) restructuring the biodiversity management framework, to overcome the constraints that have limited the effective management of protected areas.

Sub-Component 2.1: Managing ecosystems (US\$ 6.0 million)

The Project would provide support to update, prepare, and implement management plans for 3 pilot sites: the Saloum Delta Biosphere Reserve, the proposed Senegal River Delta Biosphere Reserve, and

the Cap Vert peninsula. Following is a preliminary proposal that will be updated once the results of the Biodiversity Baseline Study become available in January 2004. Most particularly, the list of on-the-ground activities and planned investments will be finalized prior to appraisal.

Preparation of each plan would be supervised by a management committee for each site including the conservateurs of the Protected areas within the proposed site, regional MoF officials, the TURF facilitators mentioned in Component 1.1, and representatives of the local communities. DPN would competitively select consultants to lead the preparation of the management plans, according to ToRs approved by the management committee. The consultants would then prepare the plans in consultation with local stakeholders. The management committees would review the draft plans and approve the final version.

The plans would incorporate the ecosystem approach, as a model of sustainable economic use and biodiversity conservation. They would bring together existing initiatives in each of the sites, and build upon their achievements. The plans would include: i) the rehabilitation and maintenance of park infrastructure, ii) comanagement of resources to provide environmentally sustainable sources of revenue for the communities living in and around protected areas, iii) participatory assessments and monitoring of biodiversity, including turtle nesting sites and breeding colonies of seabirds, iv) participatory surveillance and enforcement, v) measures to involve communities in providing services to tourists, vi) capacity and awareness building for local stakeholders, and vii) a system to monitor and evaluate performance and impact during implementation. The management plans would also include transboundary cooperation with the Niomi National Park in The Gambia, in the case of the Saloum Delta, and with the Diawling National Park in Mauritania, in the case of the Senegal River Delta.

The management plan for the *Saloum delta* would update and implement a plan prepared in 2000 by IUCN for the Saloum Biosphere reserve. The management committee for the Saloum River delta would bring together the numerous initiatives in the Saloum River delta to increase coherence, complementarities and synergies. The plan would also establish linkages with proposed TURFs in the delta (Component 1.1), and include measures to manage fishing activities within the Parc National du Delta du Saloum.

The management plan for the *Senegal River Delta* would consolidate the set of protected areas in the Senegal River delta and contribute to the establishment of a proposed biosphere reserve. It would specifically help protect breeding sites for sea turtles and sea birds, as well a breeding sites and nursery grounds for coastal fish species. The Project would help establish a *Zone de Protection Speciale* by the Ministry of Environment that would freeze land use in the area south of the Saint-Louis to Ross road, to avoid further disruption of the ecosystem.

The management plan for the *Cap Vert Peninsula* would be a first step towards the creation of the Cap Vert Biosphere Reserve, including the Parc National des Îles de la Madeleine. The expected outcome is a set of agreements with local fishing communities to participate in the sustainable management of biodiversity along the coast of the Cap Vert Peninsula.

Implementation of the management plans would also be overseen by the management committees for each of the pilot sites. The plans would be implemented by DPN staff assigned to the protected areas within the pilot sites. Each protected area conservateur would designate one or more community liaison officer to work with local communities. Implementation would be accompanied by an awareness campaign and regular consultations at the community level.

The project would also provide complementary support to efforts by WWF, the Oceanium and other NGOs to establish Marine Protected Areas and coastal NCRs. The emphasis of this support would be on capacity building for local stakeholders and targeted technical assistance to help establish the

protected areas. The extent of this support will be determined prior to appraisal following consultations with WWF and the Océanium.

Sub-Component 2.2: Strengthening the Biodiversity Conservation Framework (US\$1.7 million)

Restructuring of the biodiversity management framework would include a thorough revision of the legal framework, the institutional framework, the governance mechanism and the establishment of a mechanism to ensure long-term sustainability.

Activity 2.2.1: Biodiversity law

The Project would support the preparation of a Biodiversity and Protected Area Law, setting national objectives, incorporating obligations under international conventions and treaties that Senegal has signed, defining the different types of protected areas, their objectives and management principles, adopting comanagement as a driving principle and setting comanagement guidelines, redefining the mandate of DPN, and defining the mandate of the National Biodiversity Committee and its link to the DPN. One of the options that would be considered is the establishment of a semi-autonomous Biodiversity and Protected Area Agency (ABAP in French), with its own governance mechanism. Such an Agency would be permitted to keep the revenue that it collects from tourism, permits or fines.

Activity 2.2.2: Strengthening of DPN

The project would provide support to the DPN, to reorganize itself according to the new mandate spelled out in the Biodiversity and Protected Area Law. Prior to the adoption of the Law, the Project would support a reorganization of DPN according to the organogram adopted in 2003. Proposed measures would include:

- training of officers in participatory planning and in communication,
- technical training in biodiversity management techniques (focusing on coastal biodiversity), and monitoring,
- strengthening of performance monitoring and evaluation,
- critical equipment.

Monitoring and evaluation would focus on the performance of management plans for protected areas (Biosphere reserves, National Parks, Reserves, Marine Protected Areas and Community Nature Reserves) overseen by the DPN. Monitoring and evaluation would also cover all activities within the DPN work program. M&E results would provide effective and efficient oversight of DPN's activities to its management.

Activity 2.2.3: National Biodiversity Committee and Biodiversity Monitoring

It is expected that the Biodiversity and Protected Area Law will establish the National Biodiversity Committee as the main Governance body regarding biodiversity management in Senegal. The Committee would, amongst other functions, ensure a seamless integration between the activities of the Project and those of the UNDP funded PGIES. The Project would support the National Biodiversity Committee to monitor and evaluate the state of biodiversity in Senegal and the performance of the DPN. A study proposed for financing under a PHRD grant will define the set of biodiversity indicators that would be regularly monitored. The NBC would produce a State of Biodiversity Report with annual updates, and disclose them to the general public. The Report would indicate the status and trends of significant or threatened species and habitats.

Biodiversity monitoring would include data gathered by DPN in the protected areas that it manages (see

above), as well as data collected through targeted studies or programs. The Project would fund certain key studies, most particularly regarding sea turtles, but the NBC would also seek the support of the conservation community, as well as the assistance of national and foreign researchers through research agreements.

The Project would also support the strengthening of the nascent biodiversity information system, to manage data and records resulting from the above mentioned monitoring activities.

Activity 2.2.4: Sustainable financing

In partnership with WWF, the Project would fund a feasibility study and consultations regarding the Establishment of a Trust Fund for Biodiversity Conservation in Senegal. The process would be overseen by the National Biodiversity Committee. The study would build upon the results of the Public Expenditure Review and Economic Analysis of Biodiversity, proposed to be funded under a PHRD grant. It would also take into account documents produced by the GRAST, as well as the efforts to establish an International Niokolo Koba Foundation in 1993.

Component 3. Program management, M&E and Communication (US\$1.2 million)

- 3.1 **Monitoring and evaluation (US\$0.5 million).** The PCU will manage aid from donors and co-operating partners, and ensure the efficient flow of project funds to implementation cells and procurement activities. The Project will support the development by a consultant and implementation by the PCU of a system to monitor and evaluate overall project performance and impact, using a set of key indicators. The PCU will be responsible for gathering the relevant information from the implementing institutions. The Project will also support periodic independent evaluations of program impacts and beneficiary assessments by independent consultants at startup, midterm and completion.
- 3.2 **Coordination (US\$0.4 million).** The PCU will ensure the operations of the GIRMaC Steering Committee and the Advisory Scientific and Technical Committee. It will also support the multi-institutional structures necessary in the pilot intervention areas to ensure coordination amongst various implementing agencies, including joint sessions between the CNCMP and the national Biodiversity Committee. Linkages will be worked out prior to appraisal.
- 3.3 **Communication (US\$0.2 million).** The PCU will develop and implement a communication plan to ensure the flow of necessary information to and from stakeholders on project activities.
- 3.4 **Sub-regional Coordination (US\$0.1 million).** The PCU will coordinate with sub-regional and regional structures involved in similar initiatives.

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
Component 1. Development of sustainable fisheries	8.10	47.6	7.00	70.0	0.00	0.0
Component 2. Conservation of habitats and species	7.70	45.3	2.00	20.0	5.00	100.0
Component 3. Program management, M&E and Communication	1.20	7.1	1.00	10.0	0.00	0.0
Total Project Costs	17.00	100.0	10.00	100.0	5.00	100.0

2. Key policy and institutional reforms to be sought:

The most fundamental shift in policy sought by the Project is a coordinated approach to coastal and marine resource management that links sustainable fisheries and biodiversity conservation. This would be achieved by emphasizing the importance of resource management in making Senegal's fisheries sustainable, and the need for protected areas to contribute to the maintenance of fish stocks. This policy shift would be confirmed in a letter of Coastal and Marine Resource Management Policy to be approved by GoS and agreed with the donors supporting the Project prior to negotiations. The Project Steering Committee and the Scientific and Technical Committee would be key instruments in implementing this new policy.

The most critical policy reform sought through the project in the fisheries sector is the recognition of user rights for artisanal fishermen, and the establishment of TURFs managed by local fisheries committees. This reform would represent on the one hand a major political decision by Government to share the responsibility for the management of artisanal fisheries with its stakeholders and, on the other hand, the end of free access by artisanal fishermen. The recognition of user rights for artisanal fishermen would be balanced by their commitment to manage fish resources in a responsible manner.

Other major reforms are also expected in the fisheries sectors, but their exact nature will only be determined by the Special Commission. These might include a fundamental restructuring of the Ministry of Fisheries, as well as the establishment of a Fisheries Trusts Fund, restrictions in industrial fisheries operations and capacity, and the imposition of biological rest areas and periods to allow fish stocks to recover.

The Project would also support a revision of the policy and legal framework for biodiversity and protected areas that would confirm agreements and decisions already made by Government. The revision would thus provide greater clarity to policy objectives.

At the local level, the project would leverage the biosphere concept to balance the sometimes conflicting objectives of fisheries and conservation, as well as other goals such as tourism and land development, and to promote the integrated management of coastal and marine resources. Thus, management committees would be set up in each of the three pilot areas, with representation from principal stakeholders.

The following national policies and reform programs would have a bearing on the project's implementation:

- National Conservation Strategy (NCS)
- National Environmental Action Plan (NEAP)
- National Biodiversity Strategy and Action Plan
- Integrated Framework
- Poverty Reduction Strategy Paper (DSRP)
- NEPAD
- Fisheries Sector Strategy
- Draft Letter of Environmental Policy

3. Benefits and target population:

This project will help:

- secure the livelihood of fishers and persons dependent on fisheries for their livelihood, by halting the decline in fish production and rural sector income; increased rural sector benefits, foreign sector earnings and employment may come later;

- conserve biodiversity of global interest in the three pilot sites;

The Project would also facilitate the participation of stakeholders in the management of coastal and marine resources, including local communities, NGOs, the private sector, Government authorities and the general public. Such participation in the formulation, implementation, and monitoring of the Project is considered essential and cardinal to its success, and would be ensured through stakeholder and beneficiary workshops and consultations, throughout project preparation and implementation.

4. Institutional and implementation arrangements:

The project would have an implementation period of five years: from September 2004 to August 2009. The detailed institutional, financial, procurement, and monitoring and evaluation arrangements will be confirmed during appraisal. Nevertheless, the following proposal is currently under discussion.

4.1 Institutional framework

The project's success would require effective coordination among the various institutions involved in the management of coastal and marine resources. In this light, the GoS has established a Program Steering Committee with a measure of autonomy to oversee implementation of the Program. The GoS has designated the Ministry of Environment and Sanitation to chair the Committee during the preparation period, but this decision will be reviewed during appraisal. The Steering Committee comprises 15 members (including the chair), as follows:

- Ministry of Environment (3)
- Ministry of Fisheries (3)
- Ministry of Agriculture (1)
- Ministry of Mines and Energy (1)
- Ministry in charge of Land Planning (1)
- Ministry of Tourism (1)
- Ministry of Armed Forces (1)
- Community Based NGO representative (1)
- International NGO representative (1)
- Artisanal fisheries (1)
- Industrial fisheries (1)

The Steering Committee's mandate is to focus on strategic and policy orientation. Most particularly, it will ensure that the program of activities funded by the Program is consistent with the Program's objectives, as stated in above-mentioned Letter of Policy. It will also:

- review and approve annual work programs,
- review the implementation of work programs,
- review annual progress in achieving specific outcomes through a predetermined set of indicators,
- provide implementing units with suggestions for improvements.

An advisory Technical and Scientific Committee that brings together representatives of the Program Stakeholders will support the Steering Committee.

For the Steering Committee to operate on a day-to-day basis, it is served by a permanent secretariat called the Project Coordination Unit (PCU). The PCU is already in place and involved in the preparation of the project. It currently comprises a Coordinator with qualifications and experience acceptable to IDA, assisted by a Deputy Coordinator seconded from the Department of National Parks,

a deputy Coordinator seconded by the Department of Marine Fisheries, a financial management specialist, a procurement specialist, support staff (Program Assistant and Driver), and technical staff (a communications specialist and a biodiversity specialist). The PCU plans to add a Fisheries Specialist and a Community Development Specialist. The PCU is currently hosted by a building provided by the Department of National Parks.

The PCU will coordinate Project activities and ensure that they are implemented in accordance to the Project Implementation Manual, including the Environment and Resettlement Framework. The PCU will be directly responsible for the implementation of Components 3. However, since the project addresses specific sectoral issues, the technical management of Components 1 and 2 will be decentralized as follows:

Component 1 - Development of Sustainable fisheries. Activities will be implemented and overseen by an Operational Implementation Cell within the Ministry of Fisheries (OIC-Fisheries). The Cell will comprise a Component Manager, a combined Financial Controller/Procurement Officer, and supporting secretarial staff, and shall work under the supervision of the Ministry of Fisheries. The OIC will also oversee activities implemented through the CRODT.

Component 2 - Conservation of Critical Habitats and Species. Activities will be implemented by the Department of National Parks. A Component Coordinator position will be established under the Office of the Director, but activities funded by the project will functionally integrated with DPN's Directorate structure, to minimize the administrative burdens of project management. Some of the activities related to biodiversity monitoring will be managed by the *Groupe de Réflexion et d'Appui Scientifique et Technique* (GRAST). Additional Technical Assistance will be outsourced as required.

