

SENEGAL
Integrated Marine and Coastal Resources Management Project

GEF Project Document

Africa Regional Office
AFTS4

<p>Date: August 19, 2004 Sector Manager: Mary A. Barton-Dock Country Manager/Director: John McIntire Project ID: P086480 Lending Instrument: Specific Investment Loan (SIL)</p>	<p>Team Leader: Yves Andre Prevost Sector(s): General agriculture, fishing and forestry sector (100%) Theme(s): Other environment and natural resources management (P), Biodiversity (S)</p>			
<p>Global Supplemental ID: P058367 Sector Manager/Director: Mary A. Barton-Dock Lending Instrument: Specific Investment Loan (SIL) Focal Area: B - Biodiversity Supplement Fully Blended? Yes</p>	<p>Team Leader: Yves Andre Prevost Sector(s): General agriculture, fishing and forestry sector (100%) Theme(s): Environmental policies and institutions (P) , Biodiversity (P), Other environment and natural resources management (S)</p>			
Project Financing Data				
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BORROWER		1.49	0.00	1.49
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GLOBAL ENVIRONMENT FACILITY		5.00	0.00	5.00
Total:		16.49	0.00	16.49

Borrower/Recipient: GOVERNMENT OF SENEGAL

Responsible agency: UNITÉ DE COORDINATION DU PROJET

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P086480 Estimated Disbursements (Bank FY/US\$m):

FY	2005	2006	2007	2008	2009	2010			
Annual	3.10	1.60	2.20	1.60	1.50				
Cumulative	3.10	4.70	6.90	8.50	10.00				

P058367 (GEF) Estimated Disbursements (Bank FY/US\$m):

FY	2005	2006	2007	2008	2009	2010			
Annual	1.90	1.20	0.80	0.50	0.60				
Cumulative	1.90	3.10	3.90	4.40	5.00				

Project implementation period: 5 years

Expected effectiveness date: 12/01/2004 **Expected closing date:** 12/01/2009

A. Project Development Objective

1. Project development objective: (see Annex 1)

The project's development objective is to increase the sustainable management of marine and coastal resources in three pilot areas by communities and the Government of Senegal. 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. Management 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 environmental objective of the Project is to secure the conservation and management of Senegal's marine and coastal ecosystems, which are globally significant and vital to the sustained livelihoods of coastal communities.

The GEF would support efforts by the Department of National Parks (*Direction des Parcs Nationaux: DPN*) to sustainably manage the network of protected areas along the coast using an ecosystem approach.

3. Key performance indicators: (see Annex 1)

Performance indicators for project outcome would be:

- Catch per fishing effort improved by 10%-30% from baseline in most community-managed fisheries targeted by the Project, by end of Project.
- Effectiveness of biodiversity management improved in the 3 pilot areas by 20% at mid-term review and 50% at the end of the Project, 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:

Management of Sustainable Fisheries

- Local fisheries management sub-projects implemented in 4 pilot sites within 18 months of Project startup, and implemented in an additional 8 pilot sites within the following 18 months.
- 60% of Local Fisher Committees implementing sub-projects comply with sub-project performance targets by end of project.
- National management plans for at least 2 key fisheries are prepared, and approved by the National Consultative Council for Marine Fisheries.

Conservation of Critical Habitats and Species

- Participatory assessment of local community involvement in the management of biodiversity in the three pilot areas rated satisfactory at the end of the Project.
- Management effectiveness of key endangered species (marine turtles, manatees, and 5 species of water and sea birds) improved by 50% by the end of the Project.
- The Cap-Vert Peninsula 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.
- State of biodiversity update reports produced on an annual basis.

Program Management, including Monitoring and Evaluation (M&E), and Communication

- Information sharing by Project Coordination Unit (web site, newsletter, direct requests) rated satisfactory by 75% of users at mid-term and at the end of the Project.
- The awareness of stakeholders in pilot areas regarding the causes and proposed remedies to coastal and marine resource crisis is increased twofold prior to mid-term review.
- 85% of quarterly and six-monthly progress reports prepared on time.
- Coordination subcommittees established with the Senegal River Basin Project, the Protection of the Canary Current Large Marine Ecosystem (LME) Project, and the Project to enhance the conservation of the critical network of sites required by migratory waterbirds on the African/Eurasian Flyways.

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, Ecosystem Management Committees 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 socioeconomic development. If successful, the models developed and piloted would be replicated elsewhere in Senegal.

The project is also aligned with GEF Strategic Priority #I: Catalyzing Sustainability of Protected Areas and, Priority # II: Mainstreaming biodiversity in production landscapes and sectors. GEF support would significantly contribute to strengthening the network of coastal protected areas in Senegal. This would include participation of local communities residing in and around protected areas in comanagement, and lead to increased stability of the coastal protected area network. The project would 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 Act, institutional strengthening of the Department of National Parks (DPN), as well as the establishment of the National Biodiversity Committee as the main 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 comanagement to provide a legal underpinning to the *de facto* policy.

The project would also support the sustainable utilization of marine resources, in particular fish resources, and help 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) that encompass protected areas and community nature reserves. The project would also integrate conservation priorities and sustainable use into existing area-based fisheries management practices by local fishing communities.

Senegal includes over 700 km of coastline, just South of the Sahara desert. This coastline is under the direct influence of the Canary Current, one of the Global 200 ecoregions defined by WWF, which constitutes one of the richest and most productive upwelling areas in the eastern tropical Atlantic Ocean. The nutrients provided by upwelling are further boosted by the nutrient rich waters carried by the Senegal River.

The country's transitional position makes its biological diversity significant both regionally and globally. Senegal represents the northern limit of distribution for a large number of tropical species of coastal and marine animals and plants, and also provides critical resting and wintering areas for several Palearctic

migrant birds. Senegal's coast hosts numerous threatened species listed in IUCN's red list, including 43 fish species, 15 marine mammals, 5 sea turtle species, 8 species of birds and 3 species of seahorses. Major coastal habitats include (see Annex 11 for further details on Project pilot areas):

- **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 Pink Shrimp (*Penaeus duorarum*), mullet (7 species including the Yellow Mullet, *Mugil cephalus*) and Bonga Shad (*Ethmalosa fimbriata*).
- The **Niayes**, a series of small depressions located among 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 mangroves host severely threatened populations of the West African Manatee (*Trichechus senegalensis*), the Atlantic Humpbacked 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 shrimp, mullet 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 (*Eretmochelys imbricata*). Small islands and sandbars strewn along the coast also hold large nesting colonies of White Pelicans and Pink-backed Pelicans (*Pelecanus rufescens*), Slender-billed Gull (*Larus genei*), Grey-headed 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-billed Tropicbirds (*Phaeton aethereus*), the only one along the coast of West Africa.

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 Senegal's coastal waters.

2. Main sector issues and Government strategy:

Fishing plays a critical in Senegal's economy, contributing approximately 2.3% to GDP in 2002. If all sector related activities such as processing and marketing are included, the gross value of production was approximately US\$550 million, and the domestic value added approximately US\$370 million. Senegal's fisheries also directly or indirectly employ some 600,000 people (roughly 17 percent of the active workforce), including a total of over 52,000 full-time artisanal fishers. In 1999, Senegal exported roughly 124,000 tons of fish products (over 60% intended for the European market), with a commercial value of over US\$300 million, representing between 25% and 30% of the country's exports.

A recent Bank ESW points out that Senegal's fishing industries have experienced a spectacular cycle of growth and decline in the last 30 years, with landed catches increasing from 50,000 tons in 1965 to 450,000 tons in 1997, and subsequently decreasing to less than 400,000 tons in 2000. A scientific conference in 2002 concluded that fishing sector is in a crisis that particularly affects coastal demersal resources, such as groupers, breams, shrimp, octopus and cuttlefish, which represent the bulk of exports. Data show that the biomass of many of the most commercially valuable species has strongly declined since the 1950s, as a result of excessive fishing. Total catch figures mask the seriousness of the crisis because the preferred species that are overfished have been replaced by less valuable species. The catch figures also do not reflect the fact that approximately 30% of demersal fish landed in Senegal now originate from Mauritania, The Gambia or Guinea Bissau.

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

	1965	1995	1996	1997	1998	1999	2000	2001	2002
Industrial Fish catch		92	89	110	84	81	52	59	47
<i>Senegalese Trawlers</i>									
<i>Foreign Vessels</i>						15			
<i>Tuna</i>						13			
Artisanal fish catch							290		
<i>Small pelagic species</i>									
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 DPM)

The 50% decline in catches of demersal species in Senegalese waters between 1997 and 2002 has had a major impact on the economic performance of Senegal's fisheries. Over the period 1996-2002, total value added from the industrial fleet declined an estimated 37%, although the decline was less (16%) for individual vessels, in large part because many vessels had become unprofitable and thus had stopped operating. Total value added of the artisanal fleet fishing for demersal fish declined almost 42%.

An important corollary of the decline in fish resources is a decline in coastal and marine biodiversity. Fish resources are a key element of coastal and marine biodiversity and excessive fishing destabilizes the marine ecosystems, by triggering 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; the shores of the Cap-Vert Peninsula, including Senegal's only coral reefs off the Island of Gorée, are heavily polluted by sewage; large parts of the Baie the Hann, a major nursery ground for marine fish, have become an ecological wasteland because of unregulated industrial

pollution; 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 is established along the coast.
1980s	Industrial fisheries abandon small pelagics and start exploiting high value demersals. Export market surges following the appearance of refrigerated containers. Artisanal fisheries recapture 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 comanagement with neighboring populations. Community-based parks are created.

2.1 Underlying Issues (fisheries)

The root causes of the fisheries sector's 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 earlier mentioned ESW that was commissioned by the Bank on the fisheries sector in Senegal, follows up on the IF document and outlines the issues to be addressed by a sector-wide program.

The main conclusion of the ESW is that the current management regime has resulted in considerable overcapacity in both artisanal and industrial fisheries. The sector will rebound only if fishing capacity is reduced to allow fish stocks to recover, and afterwards remains at a sustainable level. The ESW concludes that this can only be achieved if: (i) the management system is improved, (ii) the management of fish resources is based on increased knowledge, and (iii) governance institutions are reorganized.

2.1.1 Fisheries Management System

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

Even then, the Law does not directly regulate artisanal fisheries, setting no limit on who can fish, where they can fish, what they can catch or how much they can catch. There is clear evidence that such ungoverned, open access fisheries are ecologically, economically, and socially unsustainable. The current system has led to an increase in fishing capacity and fishing effort that exceed available resources, for both artisanal and industrial fisheries. It has also led to the concentration of large portions of Senegal's artisanal fisheries in the hands of powerful middlemen, most particularly in Mbour. Such concentration tends to increase poverty in fishing communities by either marginalizing small fishing operations or converting independent fishermen to low paid employees. Boat owners have a strong interest in preserving their access to all resources and tend to be opposed to the local fishing restrictions required to sustainably manage fish resources. Government attempts to regulate artisanal fisheries have failed because of political resistance from these commercial interests and the only restrictions in place are limits on the type of gear that can be used.

The fisheries administration has not been supportive of local initiatives to limit fishing efforts. Two historical 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 it 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 these are 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, the Government provides access to foreign fleets through bilateral fishing agreements, further exacerbating the pressure on some fish stocks. The Government receives approximately US\$20 million annually in return, a fraction of the value of the fish caught.

2.1.2 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 the *Institut Sénégalais de Recherche Agricole* (ISRA), under the Ministry of Agriculture. With external assistance, most particularly from ORSTOM (France), the institute became the premier marine fisheries research institution in West Africa. However, CRODT's research capacity has substantially decreased since 1990, following the loss of many senior staff to the private sector and to international organizations. As a consequence, CRODT's current contribution to fisheries management is modest. The institutional attachment of CRODT to the Ministry of Agriculture has been blamed as another reason for this poor performance and for the disconnect between research activities and priorities of the

fisheries sector.

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 approximately 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 social, cultural and political context for fisheries management is also insufficient for making sound policy choices. In particular, little research has been done on local management strategies or the relationship of these strategies with decentralization policy and practice.

2.1.3 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 Underlying Issues (biodiversity)

2.2.1 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, including 5 National Parks and 3 Nature Reserves. The *Parc National des Oiseaux du Djoudj* 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 on the Conservation of European Wildlife and Natural Habitats (1971), 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 Government, 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 (*Réserves Naturelles Communautaires: RNC*).

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/Netherlands, 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 PGIES started in 2002 and intervenes in 4 pilot areas: *Parc National du Niokolo Koba*, *Réserve de Faune du Ferlo Nord*, 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*).

2.2.2 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 are interpreted to forbid fishing in the Saloum National Park, whereas 90% of fish landed by neighboring communities probably originate from within the Park, representing approximately 5-10% of national captures. The existing legislation does not explicitly support the establishment of proposed new types of protected areas (biosphere reserves, marine protected areas, or community nature reserves), and does not incorporate the obligations created by Senegal's signature to international agreements or reflect stated decentralization goals for local stakeholders.

The Department of National Parks (*Direction des Parcs Nationaux: 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 national 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 (NBC) 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 is threatened by the absence of 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.

2.3 Government Strategy

The fisheries crisis is so acute that there is now a broad consensus on the need to shift the focus from sector development to the sustainable management of fish resources, as proposed in the April 2001 *Stratégie du Développement Durable de la Pêche et de l'Aquaculture*. The main thrusts of the Government's efforts to implement this fisheries management strategy are: (i) the creation of a Special Commission, (ii) the establishment of a user-rights system, (iii) the registration of all artisanal fishing boats, (iv) the implementation of advisory councils at the national and local levels.

The Government is also extremely sensitive to the need to establish stronger linkages between fisheries management and biodiversity, and considers the Project as a strategic first step toward establishing such linkages. The common thread between fisheries and biodiversity management is the use of an ecosystem approach to the management of marine and coastal resources.

2.3.1 Special Commission

The Government intends to establish a Special Commission that will develop within a short period a plan to halt the ongoing decline of key fish species, and initiate steps to restructure the fisheries sector, including measures to reduce catches, the reorganization of the institutional framework, and the implementation of a communication strategy. The recommendations of the Special Commission would provide a framework for further intervention in the fisheries sector.

2.3.2 Fisheries User Rights System

The Ministry of Maritime Economy (MME) has established a working group with the support of the *Coopération Française* to design rights-based systems for Senegal's fisheries. The working group has finished the first phase of its work, and issued its final report in June 2004: *Appui au Ministère sénégalais de la Pêche pour la mise en place de systèmes de droits d'accès aux ressources de sa Zone Économique Exclusive*. The report concludes that Senegal's fisheries should be managed through a dual track system. Industrial fisheries and highly commercial artisanal fisheries would be subjected to a system of fishing licenses that would evolve toward a rights-based system with individual or group quotas for specific species or groups of species. The fishing licenses would limit fishing capacity by restricting technical parameters such as engine power and gear. This approach would be combined with an overall reduction in industrial fishing capacity, by reducing the number of licenses that are renewed, in combination with active buyouts or quota trading.

In contrast, artisanal fisheries targeting demersal species in coastal areas would be managed through a comanagement system, including area-based comanagement, involving Local Artisanal Fisheries Councils and Local Fisher Committees. Such a system would factor in multiple management objectives reflecting environmental, biological, economic, and social considerations. A key objective would be to reduce economically inefficient competition among fishermen to catch scarce fish. It would allow for area-specific management measures designed in consultation with local fishermen, such as limits on the numbers of boats, restrictions on gear, seasons and fishing areas, to protect spawning and juvenile fish, and specific limits on fish landings to optimize fish price and quality. A critical accompanying measure would be the implementation of locally designed mitigation measures to compensate local fishermen for the reduction in fishing effort. These recommendations are in line with the conclusions of the ESW, which concludes that area-based comanagement is a key part of the solution to the demersal species crisis.

The establishment of a dual system would require the Government to determine resource allocations for artisanal and industrial fisheries. The Government is still evaluating the technical, operational, political and legal aspects of the proposed system. Key staff of the MME are concerned about maximizing the resource rent and avoiding open conflicts that could result from enforcing exclusionary rule. They favor the quota-based license system as the market-based instrument of choice to allocate the Total Allowable Catch (TAC) of fish resources and thus reduce fishing efforts. In contrast, other staff and most environmentalists fear that a single, centrally-administered, quota-based license system covering both industrial and artisanal fisheries would limit the pallet of options for local stakeholder involvement in fisheries management and control, and would not provide an institutional link to local stakeholder experience and knowledge. Such a system would still have the inherent risk of a resource collapse, and would make it difficult to optimize the impact of local marine protected areas on the health of fish stocks.

The Project would serve to test in the field the feasibility and sustainability of comanagement for artisanal fisheries, including the option of area-based comanagement.

2.3.3 Registration of Fishing Boats

Senegal does not currently have a system to register the more than 10,000 pirogues operating in national waters. Registration of all fishing boats is needed to monitor artisanal fishing operations, as part of national and local management plans. Registration also supports the collection and interpretation of fisheries statistics, improves the quality of research data, and would facilitate the creation of area-based fishing rights.

Senegal intends to implement a nationwide system of registration, based on the findings and recommendations of a recently completed Swiss supported pilot project.

2.3.4 Advisory Fisheries Councils

The 1998 Law establishes a broad framework for consultations among 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 Artisanale*).

The CNCPM was established in 1999, under the chairmanship of the Director of Maritime Fisheries. The MME established a working group, with the support of AFD, to draft an implementation decree for the Local Artisanal Fisheries Councils. A first draft spelling out the mandate and organization of the Councils was prepared in 2001, and was then tested in 4 localities with the support of the Netherlands: Cayar, Joal, Sindia and Foundiougne.

Since fisheries were not one of the sectors decentralized in 1996, the Local Fisheries Councils will constitute the sole mechanism for managing fisheries issues at the local level. The latest draft provides for 30 Local Councils. Several issues need to be finalized, including: (i) the proportion of fishermen among Council members, (ii) the role of the local councils in the operational management of local fish resources, (iii) the link between the councils and traditional power structures, (iv) the geographic footprint of the maritime area under their responsibility.

Independently, artisanal fishers have established the CONIPAS (*Conseil National Interprofessionnel de la Pêche Artisanale au Sénégal*) in August 2003 to represent them at the national level. CONIPAS includes five groups: FENAGIE (*Fédération Nationale des Mareyeurs du Sénégal*), CNPS (*Collectif National des Pêcheurs artisans Sénégal*), UNAGIEM (*Union Nationale des GIE de Mareyeurs*), and FENATRAMS (*Fédération Nationale des Transformatrices et Mareyeuses du Sénégal*). The CONIPAS has been nurtured by the *Agence Nationale de Conseil Agricole et Rural* (ANCAR).

2.3.5 *Ecosystem Approach*

The Ministry of Environment and Nature Protection has since the early 1990s adopted comanagement as its core policy, as demonstrated in the National Environment Action Plan (1997) and the National Biodiversity Strategy (2000). Most particularly, the Government wants to promote the establishment of community-based protected areas, to increase the protected area coverage from 8% to 12% of the country.

Another key strategic element has been the use of the approach promoted by the Man and the Biosphere (MAB) program of UNESCO, including the establishment of **Biosphere Reserves** as a key instrument to manage ecosystems.

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, 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 Minister of Fisheries organized a meeting on January 15-16, 2004, to mobilize donors around a common agenda, starting with a shared definition of issues. This agenda brought together projects currently under preparation by the World Bank and by FAO/AfDB, as well as ongoing projects from the EU, the *Agence Française de Développement* (AFD), and Japan. A donor coordination group for the fisheries sector was also established following the meeting. Furthermore, the specific areas of intervention for each donor were identified during Project appraisal, and steps were taken to ensure complementarity and leverage synergies. The Government 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, and maximize project impact and synergies with other donors. The Project cannot do everything everywhere at once. Hence, it was agreed that the project would focus on increasing the sustainability of artisanal fisheries, with an emphasis on high value demersal fisheries, as well as improving the management capacity of local stakeholders. Since artisanal fisheries are labor intensive, such a focus would have the greatest impact on poverty reduction and rural development. 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 was also reached with the Government, and after consultations with other donors, that the Project would concentrate its efforts on three pilot areas (see map below):

- Senegal River Delta
- Cap Vert Peninsula, from Cambérène to Somone

- Saloum River Delta, from Palmarin to Djinack

Government has requested that the Project consider Basse Casamance, but this would only be possible when peace agreements with rebel factions are finalized.

The pilot areas were selected on the basis of the following criteria:

- they constitute ecosystems critical for Senegal's fisheries, including endemic or threatened species;
- they are inhabited by fishing communities with strong cultural identity and a commitment to the sustainable management of marine and coastal resources (as expressed during preparatory workshops);
- they include existing marine protected areas.

The pilot areas include 4 out of Senegal's 6 National Parks and 3 out of 5 Nature Reserves (see Annex 11 for more details on site characteristics and biodiversity values). The inclusion of existing protected areas will make it easier for the Project to maximize synergies between sustainable fisheries objectives and biodiversity conservation objectives, through the use of an ecosystem approach, as described below.



3.3 Ecosystem Approach

The third strategic consideration is the use of an ecosystem approach. The key to the Project's design is to link the FAO definition of the ecosystem approach for the fisheries sector, as detailed in the

Guidelines on the Ecosystem Approach to Fisheries (FAO, 2002), to the definition used by the Biodiversity Convention and adopted by UNESCO for its Biosphere Reserves.

FAO	Biodiversity Convention
<p><i>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.</i></p>	<p><i>The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.</i></p>

The ecosystem approach is deemed necessary to ensure the long-term sustainability of Senegal's marine and coastal resources. It entails conserving the structure and function of the marine ecosystem, in addition to preserving fishery resources. It implies managing the entire marine ecosystem that supports the fisheries, and not just commercially important target species. Its implementation 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 Comanagement

The use of an **area-based comanagement** system for artisanal fisheries that target demersal species is at the heart of the Project's ecosystem approach. Area-based comanagement has been practiced for decades in Japan and more recently in the Philippines. In such a system, fishermen would share with Government both the power to make decisions regarding a geographically localized fish stock, and accountability for those decisions. The system would aim to create a healthy and resilient marine environment, and to maximize socioeconomic benefits, including fisher revenue and employment. 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*.

The area-based comanagement system would involve two key local institutions: the Local Artisanal Fisheries Councils and Local Fisher Committees. Thus, the Project would support the planned establishment of Local Councils by Government in the three pilot areas. The Councils would serve to deliberate and approve local fisheries management initiatives formulated by Local Fisheries Management Committees. The Project would support the establishment of these Committees, as associations (Loi de 1901), or cooperatives. Membership would largely be limited to actual or retired fishermen, and crew members. The Committees would be independent of the local Councils. They would serve to reflect and capture the experience and knowledge of particular groups of local fishermen. The role given to these Committees reflects the critical importance the Project attaches to giving a clear role in the design and implementation of comanagement measures to key stakeholders, most notably the local fishermen, working together with scientists and environmentalists. Their establishment would also create an institutional separation between the design and implementation of management measures

performed by the Committees, and the political process of consultation and discussion that will take place in the Councils.

Research by scientists engaged by CRODT would play a critical role in assisting Committees to design fisheries management measures, to ensure their environmental and scientific soundness, and to assist the Councils in packaging management initiatives into realistic and effective management plans.

The principles of the proposed pilot comanagement system will be reflected in the Letter of Policy for the Integrated Management of Coastal and Marine Resources Project.

Implementation of the pilot comanagement system would require that the Government provide, through the Ministry of Maritime Economy and CRODT, key support services such as: (i) vessel registration, (ii) assessments of all key fish resources and allowable catches, (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 local comanagement system would require the effective functioning of the CNCPM, to reach a consensus on appropriate levels of fish exploitation and the equitable allocation of these resources among stakeholders.

The Government would implement parallel measures to adequately regulate industrial fisheries, so that artisanal fishermen can fully benefit from comanagement initiatives, including: (i) an extension of the area reserved for artisanal fisheries targeting demersal species, (ii) the enforcement of fishing area restrictions imposed on industrial vessels through the use of a compulsory 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 network of coastal protected areas. If properly managed, coastal protected areas can: (i) provide nursery grounds for juveniles of fish species, (ii) serve as refuges for vulnerable species, (iii) prevent habitat damage, (iv) promote the development of natural biological communities, and (v) facilitate 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 tourism by central government.

The Project would foster biodiversity conservation and management in and around existing National Parks and Reserves in the three pilot 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 Government, 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. IUCN, Wetlands International and WWF have actively promoted fisheries comanagement, and NGOs such as WAAME (West African Association for Marine Environment) 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*, the *Réserve Spéciale de Faune du Ndiaël*, as well as the *Réserve Spéciale de Faune de Gueumbeul*, 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 *Parc National des Îles de la Madeleine*, the *Réserve Naturelle de Popenguine*, the *Réserve Naturelle Communautaire de la Somone*, the *Réserve Naturelle Communautaire de Teunguène-Yoff*, the historic Island of Gorée and the Baie de Hann.

3.4 Other Measures

Additional measures are required to ensure the long-term sustainability of the proposed changes.

3.4.1 Reconversion

Implementation of the proposed area-based comanagement system might bring about 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 who cannot continue to participate in the fishery or face declining income, to acquire new skills and find alternative employment. Current AFDS funding expires in December 2005. The GIRMaC PCU has signed a Memorandum of Understanding with AFDS management to incorporate a fisheries window in the follow-up project. Eligible measures and the final amount made available will be determined during the preparation of this follow-up project. In the meantime, the PCU will submit a proposal for a grant from the Japanese Social Development Fund that would bridge the period until the AFDS follow-project becomes effective.

3.4.3 Support to Ministry of Fisheries

The Special Commission may recommend major changes in the organization of the Ministry of Maritime Economy. It is expected that other donors would support the implementation of the Commission's recommendations. The Project would provide complementary support, inasmuch as it is needed to implement a comanagement system, including changes in the legal framework. For example, the lines of authority within MME might require adjustments to accommodate and support comanagement. These adjustments would require time, careful consultation and consensus building, to avoid disrupting MME's operational capacity.

3.4.4 Biodiversity and Protected Area Framework

Recasting the mandate of protected areas around the principles of comanagement 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 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The project would comprise three components, and the estimated cost of the program is US\$16.49 million, of which IDA would fund US\$10 million, GEF would fund US\$5 million, and the Government of Senegal would fund US\$1.49 million.

Project Component 1: Management of Sustainable Fisheries (US\$6.53 million)

The purpose of this component is to increase the sustainability of fisheries through the use of area-based

comanagement. **Component 1** would include three sub-components:

Sub-Component 1.1: National level activities to improve fisheries management (US\$1.38 million), to enable the implementation of comanagement initiatives.

Sub-Component 1.2: Promotion and coordination of local comanagement initiatives (US\$4.67 million) in three pilot areas, Senegal River Delta, the Cap-Vert Peninsula, and the Saloum River Delta.

Sub-Component 1.3: Institutional strengthening and capacity building (US\$0.48 million) to oversee, support and monitor the implementation of comanagement initiatives.

Project Component 2: Conservation of Critical Habitats and Species (US\$6.02 million)

The purpose of this component is to improve the long-term management of Senegal's network of coastal protected areas by: (i) developing and implementing management plans for these areas, according to an ecosystem approach, and (ii) restructuring the biodiversity management framework. **Component 2** would include two sub-components:

Sub-Component 2.1: Managing ecosystems (US\$4.45 million) in three pilot areas, Senegal River Delta, the Cap-Vert Peninsula, and the Saloum River Delta.

Sub-Component 2.2: Strengthening the Biodiversity Conservation Framework (US\$1.57 million) by preparing a Biodiversity and Protected Area Act, strengthening institutions, and preparing the establishment of a Trust Fund.

Project Component 3: Program management, M&E and Communication (US\$3.94 million)

The purpose of this component is to effectively manage the project. **Component 3** would include five sub-components:

Sub-Component 3.1: Monitoring and evaluation (US\$2.8 million). The Project Coordination Unit (PCU) would manage aid from donors and partners, ensure efficient implementation and procurement, monitor implementation against indicators, and commission periodic independent evaluations.

Sub-Component 3.2: Coordination (US\$0.1 million). The PCU would ensure the operations of the Integrated Marine and Coastal Resources Management Steering Committee and the Advisory Scientific and Technical Committee. It would also support the cross-sectoral structures necessary in the pilot intervention areas to ensure coordination among various implementing agencies, including joint sessions between the CNCPM and the National Biodiversity Committee.

Sub-component 3.3: Communication (US\$0.3 million). The PCU would develop and implement a communication plan to ensure the flow of necessary information to and from stakeholders on project activities.

Sub-Component 3.4: Sub-regional Coordination (US\$0.1 million). The PCU would coordinate with sub-regional and regional structures involved in similar initiatives.

Sub-Component 3.5: Activities funded under the PPF (US\$0.66 million).

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
Component 1. Management of sustainable fisheries	6.53	39.6	6.00	60.0	0.00	0.0

Component 2. Conservation of habitats and species	6.02	36.5	0.50	5.0	5.00	100.0
Component 3. Program management, M&E, and Communication	3.94	23.9	3.50	35.0	0.00	0.0
Total Project Costs	16.49	100.0	10.00	100.0	5.00	100.0
Total Financing Required	16.49	100.0	10.00	100.0	5.00	100.0

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

The most fundamental shift in policy sought by the Project is a coordinated approach to marine and coastal 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 is confirmed in a letter of Integrated Marine and Coastal Resource Management Policy (Annex 17) that was also discussed with other donors during appraisal. 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 local initiatives from fishermen to manage fish resources, including area-based comanagement initiatives. This represents 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 fisheries comanagement initiatives would be balanced by the commitment of the fishermen involved to manage fish resources in a responsible manner.

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

The Project would also support a revision of the policy and legal framework for biodiversity and protected areas that would consolidate the dispersed mandates for biodiversity management, provide greater clarity to policy objectives, confirm the decision to involve stakeholders in the management of biodiversity, and integrate international commitments made by Senegal.

At the regional 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.

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 (IF)
- Poverty Reduction Strategy Paper (DSRP)

- NEPAD
- Fisheries Sector Strategy
- Draft Letter of Environmental Policy

3. Benefits and target population:

The Project would assist Senegal to sustainably manage marine and coastal resources by: (i) sustainably managing fisheries, through the preparation of management plans for 5 key fisheries, and the promotion of comanagement initiatives, (ii) promoting integrated ecosystem management in three pilot sites.

The expected benefits from the Project have been summarized in the following table. A difference must be made between tangible and intangible benefits. The latter include: (i) capacity-building and empowerment, (ii) more secure livelihoods, (iii) enhanced marine and coastal resource base, (iv) political, social, economic and environmental benefits at the national level.

	Local	National/Global
<i>Social and Institutional</i>	<ul style="list-style-type: none"> ● Empowerment of fisher community members to manage marine and coastal resources. ● General human resource capacity in local institutions strengthened. ● Diversified livelihood strategies in fisher communities and enhanced household income security. ● Comprehensive M&E for impact and performance. 	<ul style="list-style-type: none"> ● Enhanced capacity of Government and NGOs to support local comanagement initiatives. ● Dissemination of best practices in integrated marine and coastal resource management for replication. ● Improved national coordination of donor assistance to fisheries and to marine and coastal biodiversity in Senegal.
<i>Environmental</i>	<ul style="list-style-type: none"> ● Halting the decline in fish resources and related income in three pilot areas. ● Reduced illicit and unsustainable use of natural resources. 	<ul style="list-style-type: none"> ● National policy and legislation in conformity with international treaties promoting biodiversity conservation. ● Support to the development of a national long term funding mechanism for the conservation of biodiversity. ● Improved protection of endangered and migratory species.

4. Institutional and implementation arrangements:

The project would have an implementation period of five years. The detailed institutional, financial, procurement, and monitoring and evaluation arrangements were finalized during appraisal as follows:

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 Government has established a multisectoral Program Steering Committee with a measure of autonomy to oversee implementation of the Program. The Steering Committee would be co-chaired by the Ministry of Environment and Nature Protection and the Ministry of Maritime Economy. It comprises 17 members (including the co-chairs), as follows:

- 1 representative for the Minister of State, Minister of Maritime Economy

- 1 representative for the Minister of Environment and Nature Protection
- 1 representative for the Minister of Armed Forces
- 1 representative for the Minister of *Urbanisme et de l'Aménagement du Territoire*
- 1 representative for the Minister of Tourism and Air Transportation
- 1 representative from the Ministry of Energy and Mines
- 1 representative from the Department of Economic and Financial Cooperation (DCEF), Ministry of Economy and Finance
- 1 representative from the Department of Debt and Investments (DDI), Ministry of Economy and Finance
- 1 representative from the Department of *Collectivités locales, Ministère des Collectivités Locales et de la Décentralisation*
- 1 representative from the *Conseil Supérieur des Ressources Naturelles (CONSERE)*
- 1 representative from the *Agences Régionales de Développement (ARD)*
- 1 representative from ENDA-Dialogue Politique
- 1 representative from professional organizations of artisanal fishermen
- 1 representative from professional organizations of industrial fishermen (GAIPES)
- 1 representative from the World Wildlife Fund (WWF)
- 1 representative from the International Union for the Conservation of Nature (IUCN)
- 1 representative from Wetlands International

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

- review and approve annual work programs,
- monitor 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.

The Government has also established an advisory Technical and Scientific Committee that brings together program stakeholders, including representatives from the private sector, to 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), which is placed under the administrative oversight of the Ministry of Environment and Nature Protection. The PCU has been in place since March 2003, and has coordinated preparation of the Project. It comprises a Coordinator with qualifications and experience acceptable to IDA, assisted by a Deputy Coordinator seconded from the Department of National Parks, a financial management specialist, a procurement specialist, an information and communication specialist, technical staff (fisheries management specialist, biodiversity specialist, community participation specialist and monitoring and evaluation specialist), and administrative and human resources specialist, and support staff. The PCU plans to add a Deputy Coordinator seconded by the Department of Marine Fisheries before effectiveness. The PCU is hosted in a building provided by the Department of National Parks.

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

decentralized as follows:

- *Component 1 - Management of Sustainable Fisheries.* Activities would be implemented and overseen by a unit within the Department of Maritime Fisheries, the *Cellule Opérationnelle de Mise en Oeuvre-Pêche (COMO-Pêche)*. The COMO would comprise a Component Coordinator, a combined Financial Controller/Procurement Officer, a secretary and a driver. The COMO would also oversee activities implemented through the CRODT. The COMO-Pêche would be advised by an Operational Coordination Committee (OCC), comprising institutional stakeholders involved in the implementation of Component 1.
- *Component 2 - Conservation of Critical Habitats and Species.* Activities would be implemented and overseen by a unit within the Department of National Parks, the *Cellule Opérationnelle de Mise en Oeuvre-Écosystème (COMO-Écosystème)*. The COMO would comprise a Component Coordinator under the Office of the Director, a combined Financial Controller/Procurement Officer, a secretary and a driver. Activities funded by the project would be functionally integrated with DPN's structure, to minimize the administrative burdens of project management. Some of the activities related to biodiversity monitoring would be managed by the *Comité National Biodiversité*. Additional Technical Assistance would be outsourced as required. The *COMO-Écosystème* would be advised by an Operational Coordination Committee (OCC), comprising institutional stakeholders involved in the implementation of Component 2.

4.2 Accounting, financial reporting and auditing arrangements

Financial Management would be the responsibility of the Project Coordination Unit (PCU), which would have the overall accountability responsibility for the Project. The PCU would be organized and staffed throughout Project implementation to provide efficient financial management, reporting, and administration, including:

- establishing special accounts and project accounts;
- managing appropriate accounting/budgetary information systems, to produce timely, understandable, relevant and reliable financial information that would enable management to plan, implement, monitor and appraise overall progress towards the achievement of Project objectives;
- 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;
- managing project expenditures by the *COMO-Pêche* and the *COMO-Écosystème*, to assist in the implementation implement of their respective work programs;
- monitoring the use of project funds by the *COMO-Pêche* and the *COMO-Écosystème*.

The PCU would 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 would also be the responsibility of the PCU. However, procurement planning and the selection of consultants would be done jointly with the *COMO-Pêche* for expenditures related to

Component 1, and with the *COMO-Écosystème* for expenditures related to Component 2.

Procurement of Consultant services. Consultant contracts would 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 would 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 would 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 protected areas and the construction of several *Maison du Pêcheurs*. Contracts for goods and civil works may be awarded on the basis of International Competitive Bidding (ICB) for contracts that are valued from US\$500,000 for works and **US\$150,000** for goods, or National Competitive Bidding (NCB) procedures for lesser-sized contracts.

4.4 Monitoring and Evaluation

The PCU would submit quarterly reports for IDA's 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 would 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 would be finalized during negotiations and would be included in the Development Credit Agreement (DCA) and the GEF Grant Agreement.

The PCU would utilize a variety of sources to get feedback on progress and performance. These would include: (i) meetings of the Scientific and Technical Committee, the National Biodiversity Committee, and the CNCPM, (ii) monitoring reports by the *COMO-Pêche* and the *COMO-Écosystème*, (iii) visits of Project sites, including consultations or meetings with Project stakeholders and target beneficiaries, (iii) IDA supervision missions, (iv) quarterly, six-monthly, and annual financial reports, (v) the mid-term review of project implementation, and (vi) key performance indicators at dated implementation milestones, as provided in the Development Credit Agreement and the GEF Grant Agreement.

The Project would involve key stakeholders in the Project's implementation, such as local councils, fisheries councils, fisheries operators and NGOs, in the monitoring and evaluation of the Project's performance. The PCU would organize annual workshops with these stakeholders to review Project implementation and the results of these workshops would constitute an input in the M&E process. Key stakeholders would undergo training on monitoring and evaluation practices, and on the definition of key performance indicators, to allow them to follow and document outcomes, and thus create an important source of data.

In addition, the Project Steering Committee may request the PCU to initiate interim evaluations for any component of the project, to identify necessary changes to project activities.

Each implementing unit (*COMO-Pêche*, *COMO-Écosystème*, PCU) would track implementation progress and project milestones for their respective components, and relay this information to the PCU through Quarterly Progress Reports (QPRs). M&E procedures are clearly spelled out in the Project

Implementation manual (PIM).

Each year of Project implementation, the PCU would 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 Government would also 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 would follow an outcome-oriented approach that adequately tests and captures lessons. The M&E system would thus 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 would commission the preparation of a report synthesizing lessons learned and how these might be scaled up in sector wide approaches. The report would discuss what did and did not work, and make recommendations for the next phase.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

Donor assistance to the fisheries over the past several years has been mainly focused on the construction of landing sites for artisanal fisheries, while assistance to biodiversity management has supported community-based resource management schemes and the preparation of management plans for key the protected areas. There has never been a comprehensive vision or overall strategy for the sustainable management of Senegal's coastal and marine resources. Creation of such a vision is indispensable 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 among 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 Government, the task team opted for a blend of the above ideas, formulated in a program of concentrated intervention in a few critical areas, which would provide models to be replicated in other regions in a timely way. The choice was also made to rely on the AFDS to finance CDD activities rather than include a Fisheries Fund within the Project.

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

The following operations in Senegal and in other countries are relevant to the Project:

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 decentralized management by improving the financial and budget management procedures at the decentralized and deconcentrated levels, developing policies and programs for teacher career management.</p>	<p>Quality Education for all Program (QEFA) – Credit #33330</p>	S	S
<p>The Objective of the Private Investment Promotion Project is to help create conditions that stimulate a sustained</p>	<p>Private Investment Promotion Project Credit # 37620</p>	S	S

<p>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.</p>			
<p>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.</p>	<p>Urban Mobility Improvement Program Credit # 33540</p>	U	U
<p>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.</p>	<p>SN National Rural Infrastructure Credit # 33150</p>	S	S
<p>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 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>		S	S
<p>The objective of the project is to assist</p>	<p>Public Services Information</p>	S	S

<p>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>Systems Modernization Project – Credit # 32890</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.</p>	<p>Long Term Water Sector Project Credit # 34700</p>	<p>S</p>	<p>S</p>
<p>The poorest pilot communities of 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;</p>	<p>Social Development Fund Program – Credit # 34460</p>	<p>S</p>	<p>S</p>

and (iv) building institutional capacity for the management, monitoring and evaluation of the poverty strategy of the Borrower.			
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.	Trade, Reform and Competitiveness Project Credit # 34190	S	S
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.	Nutrition Enhancement Program Credit # 36190	S	S
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 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.	HIV/AIDS Prevention and Control Project Credit # 36010	S	S
The development objective of the	Guinea Bissau Coastal and		

<p>project is to build the capacity of Government agencies and natural resource users in Guinea-Bissau to collaboratively manage coastal environments and biodiversity for both conservation and sustainable development ends.</p> <p>This objective will be pursued by creating a new institution, the Institute for Biodiversity and Protected Areas (IBAP), for managing the network of protected areas in the country. The creation of IBAP is a natural extension of past park management efforts led by IUCN-The World Conservation Union, in which models for participatory park management have shown to be successful. In addition, the project will implement community development activities in and around of protected areas funded by a micro-finance mechanism (the FIAL). Further, it will strengthen the community-based management of reserved fishing zones and the Government's capacity to support the management of these zones and fishing areas. Finally, the project will create a unit for environmental and social safeguards screening of development projects in the country, which is a function that does not currently exist within any existing government agencies.</p>	<p>Biodiversity Management Project - P083453</p>		
<p>The project's overall development objective is to promote rational management of Guinea's coastal biodiversity for both conservation and sustainable development ends, with a particular emphasis on assisting communities in and around these priority areas to plan, implement and maintain environmentally sustainable and socially inclusive alternative livelihoods options.</p>	<p>Guinea Coastal Marine and Biodiversity Management - P070878</p>		
<p>The development objective of the project is to provide a participatory</p>	<p>Senegal River Basin Water and Environmental Management -</p>		

<p>strategic environmental framework for the environmentally sustainable development of the Senegal River Basin and to launch a basin-wide cooperative program for transboundary land-water management.</p>	<p>P064573</p>		
<p>The project seeks to improve the regulatory and institutional framework for management of coastal and marine resources, to enhance the contribution of these resources to economic growth and reduction of poverty, and to develop the scientific understanding of the status of the resources and major threats to them. Project activities will be designed to assist the Government in implementation of the national coastal environmental management strategy, the National Fisheries Master Plan, and the Fisheries Act. In that regard, the project will pursue specific development objectives as follows: a) establish and/or strengthen institutions charged with management of marine resources in the near- and off-shore and Exclusive Economic Zone (EEZ), both in Zanzibar and in the mainland, and assure their performance according to designated standards; b) support activities appropriately undertaken by the public sector to stimulate increased private investment into marine and coastal areas; and c) identify and support scientific and technical research that contributes to improved regulation, management, development, and protection of marine and coastal resources.</p>	<p>Tanzania Marine and Environmental Management - P082492</p>		
<p>The purpose of the project is to establish a viable, operational, and institutionalized coral reef management system in priority coral reef sites in Indonesia. The program was originally envisaged as a fifteen year program implemented in three phases: (1) COREMAP Phase I: Initiation (1998-2001); (2) COREMAP Phase II:</p>	<p>Coral Reef Rehabilitation and Management Project (Loan 43050-IND and GEF GRANT 28373)</p>		

<p>Acceleration (2001-2007); and, (3) COREMAP Phase III: Institutionalization (2007-2013). As a result of a much more ambitious and challenging than anticipated “initiation” phase, the implementation time frame has now been modified. Moreover, as a result of significant political change in the country since 1998 and with the advent of decentralization, the program in its second phase attempts to develop a nationally coordinated, but decentralized program in implementation. As a result, the new program phasing is envisaged as: Phase I: Initiation (1998-2003), Phase II: Decentralization and Acceleration (2003-2009), Phase III: Institutionalization (2009-2015).</p> <p>The development objective of the second phase of the Coral Reef Rehabilitation and Management Program is to establish a financially sustainable nationally coordinated but decentralized program in implementation to empower and to support coastal communities to sustainably manage use of coral reefs and associated ecosystem resources, which will in turn, enhance the welfare of these communities in Indonesia.</p> <p>The global objective of the second phase of COREMAP is to establish viable coral reef management systems in priority sites of global biodiversity significance across Indonesia.</p>			
<p>Other development agencies</p>			

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

The terrestrial counterpart of the GIRMaC in Senegal is the *Programme de Gestion Intégrée des Ecosystèmes du Sénégal* (PGIES), funded by GEF and implemented by UNDP. The GEF has underlined the need for close coordination between these two projects. As a consequence, the GIRMaC and PGIES have signed a Memorandum of Understanding that ensures complementarity and promotes synergies between their respective activities. In addition, the PGIES is represented in the GIRMaC steering Committee and in its Scientific and Technical Committee. The PGIES and GIRMaC also coordinate their efforts through the National Biodiversity Committee.

The Senegal River Basin Project is funded by GEF, but executed by IDA. The project is extremely relevant to GIRMaC, as it addresses issues under the purview of the *Organisation de Mise en valeur de la vallée du fleuve Sénégal* (OMVS), which involves Senegal, Mauritania, Mali and eventually might include Guinea. The OMVS manages the Manantali Dam in Mali and the Diama Dam in the Senegal River Delta. Moreover, under its Water Charter, the OMVS has authority on the usage of water from the Senegal River. Senegal is represented within OMVS through its Ministry of Hydraulics. GIRMaC would leverage existing institutional frameworks to ensure coordination. Thus, the representative of the Ministry of Hydraulics on the GIRMaC Project Steering Committee would report on relevant OMVS activities and also ensure that GIRMaC activities are reported to the OMVS by Senegal's representative.

Coordination is also important with the GEF funded Protection of the Canary Current Large Marine Ecosystem (LME) Project currently under preparation, to be implemented by UNEP, executed by FAO and hosted by the *Commission Sous-Régionale des Pêches* (CSRП). This project would be especially relevant with regard to the management of small pelagics, which form the bulk of Senegal's fisheries and cross national boundaries. GIRMaC would address issues related to small pelagics through the fishing agreements that Senegal has signed with neighboring countries or through the CSRП, which was set up in 1985 to harmonize fisheries policies of member states. Senegal is represented on the CSRП through the Ministry of Fisheries. Thus, the representative of the Ministry of Fisheries on the GIRMaC Steering Committee would ensure appropriate exchange of information between the CSRП and GIRMaC, on ongoing project activities and potential needs for coordination.

Finally, coordination would also be sought with the GEF-funded project to enhance the conservation of the critical network of sites required by migratory waterbirds on the African/Eurasian Flyways. This project would provide support activities focused on migratory waders in the Saloum-Niumi National Park complex that straddles Senegal and The Gambia. GIRMaC would support the activities of the Flyway Project and as necessary provide enabling environment. GIRMaC would ensure that annual work plans and budgets for the Saloum Delta Biosphere Reserve are adjusted to incorporate activities of the Flyway Project when the latter becomes effective.

3. Lessons learned and reflected in the project design:

Fisheries Best Practice

The Project incorporates the lessons learned from earlier fisheries projects, as summarized in the recently published Bank document "Saving fish and fishers: toward sustainable and equitable governance of the global fishing sector", most particularly by focusing on poverty reduction and the sustainability of local resources, by targeting small-scale, labor-intensive fisheries, by supporting the organization of fishers and the allocation of use rights, by promoting alternative employment, and by establishing fully protected marine reserves.

More specifically, the Project incorporates the lessons learned during Phase 1 of the *Coral Reef Rehabilitation and Management Program (COREMAP)*, including the need to: (i) involve communities through activities that emphasize sustainable socioeconomic activities, (ii) put in place a strong legal and enforcement regime, (iii) strike a balance between conservation activities and those targeting improvements in the quality of life, (iv) use a broad ecosystem-based approach, (v) tailor the program to different cultural, socioeconomic and biophysical conditions.

The ICR for the Ghana Fisheries Sub-sector Capacity Building Project (IDA-27130) also recommends the close involvement of stakeholders, community members, and administrators, at all levels of

implementation, to build support and to ensure the sustainability of an operation. Measures to access social development outcomes need to be put in place during project implementation so that feedback can be used while the project is still active.

The approach used by the Project is also similar to that adopted by the Pilot Fishery Development Project in Albania, which seeks to provide local fishermen with community-based institutions to manage their own activities and move towards more sustainable methods.

More broadly, the Project's approach is in line with the comanagement of small-scale fisheries promoted by the WorldFish Center (CGIAR).

Measures taken by the Project

In response to the above, project design: (i) ensures stakeholder consultation and participation, to promote ownership and identify issues and concerns early on; (ii) facilitates dialogue and coordination among government and other key implementation partners, to promote synergies and reduce conflicts; (iii) includes flexibility so that activities can readily be adapted to respond to lessons learned during implementation or changing national circumstances, (iv) keep the burden placed on the national budget and counterpart contributions to a minimum; (v) adopts a programmatic approach that coordinates donor support so as to avoid overlaps and gaps; and (vi) establishes 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.

Management Capacity. Sufficient administrative and financial management capacity was built up during preparation, including familiarity with IDA procedures and guidelines.

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 engaged from early on in project preparation. The Project was prepared under the supervision of its Steering Committee and its Scientific and Technical Committee, and in collaboration with the *Comité National Consultatif pour la Pêche Maritime* (CNCMP) and the National Biodiversity Committee. More specifically, the PCU organized meetings with the GIRMaC Steering Committee, the GIRMaC Scientific and Technical Committee, the National Biodiversity Committee and the CNCMP on 14-16 October 2003 to discuss the Project Concept, and on 22-25 March to discuss the draft PAD and the Project Implementation Manual.

The PCU has also held meetings with local communities and government officials in the three pilot areas. These meetings helped involved stakeholders and increase their ownership of the Project's design. Active participation during implementation should increase community support for the program.

Experience with GEF and other biodiversity programs indicate 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 includes targeted activities 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 would be taken.

4. Indications of borrower and recipient commitment and ownership:

The Government of the Republic of Senegal would implement the Project, with the support of the World Bank, as part of the Integrated Coastal and Marine Resource Management Program. Implementation would involve the main Senegalese beneficiaries and partners, including the MENR, MME, DPN, DPM, local communities, the private sector, donors, and the GEF Focal Point at the MENR.

Component 1 of the Project is entirely consistent with the orientations proposed in 2001 in the *Stratégie du Développement Durable de la Pêche et de l'Aquaculture*.

The project is also entirely consistent with the priorities outlined in Senegal's National Environmental Action Plan (1997), as well as the National Biodiversity Strategy and Action Plan (BSAP, 1999). 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. during Component 1 of the Project will serve to implement.

Furthermore, 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.

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 coastal 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

Reversing the loss of Senegal's marine and coastal resources will require a cross-sectoral approach, that combines policy changes, institution building and investments in sector restructuring. The Bank Group has the capacity to combine the required levels of investments with policy, the management of public good where markets do not appear to work, and institutional adjustments. 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. It has considerable experience to offer in institution and capacity building, and its environmental safeguards are recognized as setting international standards. Its experience in facilitating programmatic multi-donor approaches leaves it well placed to leverage additional funds from other donors and the private sector. Several donors have already expressed a desire to actively cooperate with the Bank in the fishing sector, provided the Bank would take the lead.

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, therefore brings incremental grant resources to assist Senegal in tackling coastal and marine biodiversity issues of global environmental concern. This would 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. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

Cost benefit NPV=US\$ million; ERR = % (see Annex 4)

Cost effectiveness

Incremental Cost

Other (specify)

Senegal artisanal fishery is facing a biological and economical crisis. The massive expansion of artisanal fishing combined with the degradation of ecosystems that support fish stock have strongly depleted demersal fish biomass and has led to a sharp decline of fisher's net income: main species stocks like groupers and pageot have been reduced from 45 to 90 percent during the last 20 years and Catch Per Unit Effort (CPUE) has declined by almost 40 percent since 10 years. Without interventions to reduce fishing effort and allow stocks to recover, both stocks and income are likely to continue to decline.

A further decline in demersal fishery resources would seriously affect the economic performance of the country and would also threaten the livelihood of major population groups. Senegal is indeed one of the 12 countries in the world where fishery currently represent more than 5 percent of GDP. Demersal fisheries resources are accounting for over 50 percent of the total value of fisheries exports and an even greater share of the total volume. They are also supporting a considerable part of the 52,000 small-scale fishers in Senegal and of the 600,000 people indirectly employed by the sector. In addition to the fisheries resources supported by Senegal's coastal ecosystems, the globally significant biodiversity found in these areas has been in crucial factor in the growth of ecotourism in Senegal.

The main objective of the project is to improve coastal fisheries management in three critical locations: the Senegalese river delta, the Cap-Vert Peninsula and the Saloum River delta, using an Ecosystem Approach to Fisheries (EAF). Three biosphere reserves will be strengthened (Saloum delta) or created (Senegal river delta and Cap-Vert peninsula) in order to rejuvenating fish stocks, preserve significant biodiversity and tourism revenues while Local Area Based Management Initiatives (LABMI) in 12 targeted artisanal fisheries will be introduced in order to reduce fishing capacity and thus increase CPUE.

All three areas encompass over 250,000 hectares of some of the country's most critical coastal ecosystems and habitats. These areas support both the high-value coastal demersal fisheries so essential to the artisanal fishery sector and to the livelihoods of coastal fishing communities, and globally significant coastal biodiversity. For this reason, the project adopts a coordinated approach to helping rehabilitate the key coastal demersal fisheries resources in these three areas, by both promoting sustainable coastal fisheries management and protecting the critical habitats and ecosystems upon which they depend. As such, the project links sustainable fisheries management to biodiversity conservation, and aims to yield benefits in terms of both fisheries production and the protection of globally significant

marine biodiversity and the associated ecosystem uses, like ecotourism

For the fishing communities in the three project areas directly dependent on the coastal ecosystems and the fisheries they support for their livelihoods, the project will provide significant benefits in terms of increased income and may be production over the long-term. Additionally, the project activities to protect critical coastal ecosystems in these three areas would preserve the potential of these areas to attract tourism, as well as generate additional payments from international donors for the existence of globally significant biodiversity in these areas.

Although data are insufficient to quantify the benefits the project is expected to generate, it is believe that these benefits will likely outweigh the costs of project and of foregone fisheries revenues necessary to reduce fishing effort under project management measures. In addition, the project will provide a link to a social fund to compensate fishers for these costs and assist some fishers to pursue alternative livelihoods. Annex 4 provides a rough qualitative assessment of the likely costs and benefits and of the likely fiscal impact of the project.

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

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

Not Applicable

Fiscal Impact:

3. Technical:

The Bank has prepared a ESW on the fisheries sector in Senegal. The Project's strategic choices are consistent with the recommendations of this ESW.

Several background studies were conducted during preparation or are ongoing, 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 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*

4. Institutional:

Institutional, procurement and financial arrangements were confirmed during Project appraisal.

4.1 Executing agencies:

The institutional framework includes a Project Coordination Unit (PCU) which is answerable to a Steering Committee co-chaired by the Ministry of Environment and Nature Protection and the Ministry of Fisheries. The Steering Committee would oversee Project implementation. For administrative purposes, the PCU is attached to the MEPN.

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

4.2 Project management:

The PCU has managed a PDF B grant, a PHRD grant and a PPF and thus has gained experience with Bank financial and procurement guidelines. The PCU would ensure financial management and procurement for the whole Project

Implementation units have been established in the Department of Maritime Fisheries and in the Department of National Parks, respectively for Components 1 and 2.

4.3 Procurement issues:

A World Bank Procurement Specialist reviewed and assessed the procurement practices of all Project implementing agencies during Project appraisal. The results of this assessment are summarized in Annex 6(A).

The PCU has prepared a detailed Procurement Plan for the first 18 months of Project implementation that will be finalized at negotiation. The plan would be regularly updated during project implementation.

4.4 Financial management issues:

Detailed financial management issues were identified by a World Bank Financial Management Specialist during Project appraisal. A summary of the conclusions can be found in Annex 6(B). No major issue was identified and all recommendations made in the Action Plan to strengthen financial management will be completed by negotiation.

5. Environmental:

Environmental Category: B (Partial Assessment)

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

The PCU commissioned the preparation of a full Environmental and Social Assessment, including and Environmental Management Plan and a Resettlement and Process Framework. Stakeholder consultations were organized during preparation of the assessment and the documentation was disclosed in-country and at the InfoShop prior to Project Appraisal.

The portions of the Project that needed to be assessed for environmental and social impacts included: (i) the preparation and implementation of fisheries management plans at the national and local level under **Component 1**, and (ii) the preparation and implementation of ecosystem management plans under

Component 2.

In the first instance, the main risk is that the conversion of the current open access system to a system of recognized user rights might reduce the access of certain fishermen to fish resources. The preparation of fisheries management plans that set limitations are necessary to reverse the current degradation of fish stocks, which would equally affect all fishermen. However, limiting access might impinge on the capacity of commercial fish interests to maintain or extend their control over fishing activities. In response to this dilemma, the Project relies on the *Comité National Consultatif des Pêches Maritimes* (CNCMP) as the primary negotiation consensus building forum among stakeholders for each of the 5 key fisheries management plans that the Project would finance.

Furthermore, the ToRs of the consultant that will prepare the management plans include provisions for: (i) a process to identify and provide compensation to fishermen that would have to reduce their fishing effort, (ii) the identification of potential impacts on women.

The Project would also promote the recognition of comanagement initiatives formulated by local fishermen. Such initiatives might restrict access to local fish resources by: (i) local fishermen, (ii) migrant commercial fishermen. In response to this issue, the Project would include the following objectives for the Local Fisher Committees: (i) resolving local conflicts over fish resources, (ii) sustainably managing fish resources, by limiting fishing effort or allowable catch, (iii) equitably allocating allowable catch among registered members, (iv) protecting critical breeding or nursery grounds, and (v) optimizing member income from the sale, processing, and marketing of fish products.

Furthermore, the Project has reached an agreement with Senegal's Social Investment Fund (*Agence de financement pour le développement social: AFDS*) to aid local fishermen who cannot continue to participate in the fishery or face declining income, to acquire new skills and find alternative employment.

The Project would address the issue of migrant fishermen by ensuring that they retain the rights to a reasonable proportion of the catch in the areas adopting comanagement initiatives.

The Project raises two main safeguard issues: i) the impact of comanagement initiatives on migrant fishermen, and ii) the impact of the reestablishment of natural floods on local populations in parts of the Senegal River delta.

In the second instance, the environmental assessment identified risks associated with the rehabilitation of ecological functions in the Senegal River Delta, which would include the reestablishment of seasonal floods in certain parts of the Delta, which could have potential impacts on local populations. The Project does not include funds for this purpose, but it is a stated intent of the Project to promote this measure. The decision to go forward would depend on the results of studies (topographical, hydrological and development scenarios funded by the Long Term Water Supply Project) that will not be completed until May 2005. As a consequence, the risks and impacts of such a decision could not be assessed during Project appraisal. It was agreed that support by the Project towards such a decision would be conditional on the prior preparation under the Project of an EA and EMP satisfactory to the Bank. The Government has agreed to comply with the Project's Resettlement Framework in the event that the decision is taken to go ahead with this rehabilitation.

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

Compliance with the Bank's environmental and social safeguard policies was mainstreamed in the Project's design, as explained in 5.1 above.

The EMP also includes: (i) safeguards training of key staff involved in Project implementation, (ii) a

review of environmental and social performance, as part of the Project's the mid-term review.

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

Date of receipt of final draft: February 2004

The full EA was publicly disclosed for 120 days at the Ministry of Environment and at the offices of the 5 Regional Development Agencies along the coast. The full EIA is also posted on the Project's website (www.girmac.sn). The extent of public disclosure was praised by Ministry of Environment and by regional authorities, who consider it as an example of best practice.

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

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

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

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

6. Social:

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

The Project would promote community participation in the sustainable management of coastal and marine resources in the pilot areas.

A key social development objective of the Project is to help secure the livelihood of fisher communities through comanagement initiatives. Such initiatives would 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 would monitor the living conditions of fishermen involved in comanagement initiatives and of excluded fishermen, and ensure appropriate mitigation measures for excluded fishermen, including provisional quotas and support for reconversion to non-fishing activities.

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

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

Stakeholder involvement during project preparation served to increase the chances of successfully implementing the project. Several stakeholder workshops were organized to capture stakeholder concerns and expectations, and to help build ownership and partnerships. The project's final design incorporates the views expressed during these workshops.

Stakeholder participation at the national level would be ensured through the GIRMaC Steering Committee and the Scientific and Technical Committee. The Project would also support the CNCPM to function as the primary negotiation and consensus building forum among stakeholders for fisheries issues, and for the National Biodiversity Committee for biodiversity issues.

At the local level, the Project would support Local Fisheries Councils and Local Fisher Committees. It

would also support Ecosystem Management Committees for the three pilot areas targeted by the Project.

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.

The PCU has signed a MoU with WWF, and is working closely with IUCN on the design and establishment of biosphere reserves. The Project has consulted on a regular basis with the main national fisher unions such as FENAGIE, UNAGIEMS and CONIPAS and plans to organize joint awareness campaigns at project sites.

Component 1 of the Project includes support to fishers in pilot sites to organize themselves into associations or cooperatives, to formulate and implement comanagement initiatives.

Locally, NGOs and other civil society organizations would be involved through the Ecosystem Management Committees for each pilot area, and through the Site Management Committees. The Project would promote NGO involvement in the training of stakeholders and in the reconversion process.

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

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

Furthermore, the PCU includes a Community Participation specialist that would oversee collaboration with the AFDS.

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

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

Beneficiary assessments would be conducted at the beginning of the Project, at mid-term and end-term. The assessment would make full use of stakeholders as an important source of relevant data.

7. Safeguard Policies:

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

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

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

The following safeguard policies were taken into account during project preparation and compliance mechanisms identified:

- *Environmental Assessment.* An Environmental Assessment (EA) was carried out prior to Project appraisal. An additional EA would be carried out if the Government of Senegal decides to rehabilitate the ecological function of 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 are included in the Resettlement Framework to address cultural property issues if OP11.03 happened to be triggered during Project implementation. Cultural property issues would be included as a topic of discussion during the formulation of comanagement initiatives.
- *Involuntary Resettlement.* A Process Framework was prepared prior to Project appraisal, indicating procedures to compensate for the reduction or loss in access to fish resources, following the implementation of comanagement initiatives. A Resettlement Action Plan would be prepared if the project goes ahead with the rehabilitation of the ecological functions of the Senegal River Delta. The Action Plan would be preceded by a desk review of relevant literature, as well as a ground-level opinion survey, to ensure informed and up-to-date decisions on how to proceed.

F. Sustainability and Risks

1. Sustainability:

Sustainability would be addressed at three levels:

- a. *Technical sustainability* would focus on the sustainable management of coastal and marine resources. The Project would promote a management system that reduces overexploitation, particularly of coastal demersal species, and protects critical areas that serve to replenish fish stocks. The project further proposes to improve the sustainability of protected areas by emphasizing their role as providers of ecological services to neighboring communities.
- b. *Institutional sustainability* would be promoted: (i) at the local level, through a decentralized management system that favors local ownership of objectives and management measures, (ii) at the national level by supporting the reorganization and strengthening of institutional arrangements for managing artisanal fisheries, and by revamping the regulatory framework for biodiversity conservation.
- c. *Financial sustainability* would be pursued by promoting the establishment of long-term financing mechanisms for biodiversity conservation. The main recurrent cost for biodiversity conservation is the cost of managing the network of protected areas, including the cost of monitoring biodiversity. Financial sustainability would be promoted by funding feasibility studies and consultations required to establish a biodiversity and protected area 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 initially be tested in 3 pilot sites. Valuable lessons are expected to emerge from project implementation in these pilot areas, which will be

incorporated into the Project's approach before replication and scaling up to other portions of Senegal's coast, most particularly the Casamance River delta.

The Project would address replicability as part of its Monitoring and Evaluation plan. Thus, the Project would commission an assessment of the first 4 pilot TURFs, to determine what works and what does not work, before scaling up to other communities in the 3 pilot areas. An independent consultant would also evaluate Project performance as part of the mid-term review, including a stakeholder analysis. The PCU would ensure that the ToRs for this consultancy 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 in the regulations governing coastal resources required to ensure an enabling environment for the Project's approach, most particularly the Fisheries Law and the proposed Biodiversity and Protected Area Act.

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

The following key issues were discussed during Project Appraisal:

1. Inadequate representation of stakeholders in local fisheries councils;
2. Uncertainty about the status of local fisheries committees and their relationship with local fisheries' councils;
3. Recognition of local initiatives to manage fisheries
4. Reluctance to recognize area-based rights contracts for artisanal fisheries;
5. Uncertainty about the status of fish stocks and socio-cultural conditions;
6. Adjustment of the institutional structure of the Ministry of Fisheries to support artisanal fisheries management;
7. Organization, responsibilities and funding of the MCS system at national and local level;
8. Organization, programming and funding of local research;
9. Reduction of fishing capacity of the industrial fleet.

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Stakeholders in targeted fisheries cannot agree on the measures required to sustainably manage marine and coastal resources.	H	Facilitators will work to resolve conflicts among stakeholders.
Slow implementation of subprojects because of bureaucratic delays.	H	Project will directly support key institutions involved.
Expected benefits from biodiversity management are not fulfilled.	S	Make expectations realistic and clearly defined from onset.
Local level stakeholders are not interested and committed to sustainably managing biodiversity.	S	Local level stakeholders will be involved in defining and implementing sustainable management measures.
Bureaucratic procedures delay the establishment of the Cap-Vert Peninsula Biosphere Reserve.	M	Sensitization of decision-makers.
PCU cannot retain competent staff throughout the Project.	M	Project will support PCU throughout implementation.
From Components to Outputs		
Communities cannot agree amongst themselves on subprojects.	M	Facilitators will help mediate conflicts.
Subproject performance targets are not fulfilled.	S	Subproject performance targets will be reviewed for realism prior to subproject approval.
Stakeholders cannot agree through CNCMP on measures to reduce overcapacity and overfishing.	S	Fisheries management plans would be prepared in consultation with stakeholders.
Overall Risk Rating	M	

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

Financial Management

The CFAA for Senegal concluded that the fiduciary risk of Public Financial Management (PFM) is high. However, the Government is taking actions to address the issues that were identified. Furthermore, the Government has given priority to improvements in these areas, as it has become evident that shortcomings in public sector performance constitute a major constraint to economic development and poverty reduction in Senegal.

Because of the high fiduciary risk at the country level, IDA has taken special measures to ensure adequate financial management of its portfolio, including the establishment of project management units to manage IDA-financed projects and the use of special mechanisms to mitigate the fiduciary risk of Bank funding. Accounting staff are hired as consultants, typically on salaries higher than civil service salaries, to work on projects. Furthermore, IDA projects are invariably audited by independent and competent audit firms.

The following table identifies the key risks at the project level and provides a basis for determining how management should address these risks.

	<i>Risk Assessment</i>	
	<i>H</i>	<i>MLN Comments</i>
Inherent Risk		
1. Corruption	M	The proposed financial management (FM) action plan attached in Annex 6(B) will help reduce the risks.
2. Poor governance	M	
3. Weak Judiciary	M	
4. Weak Management capacity	H	
<i>Overall Inherent Risk</i>	M	
Control Risk		
1. Implementing Entity	L	Idem inherent risk
2. Funds Flow	L	
3. Counterpart funds	M	
4. Staffing	L	
5. Accounting Policies and Procedures	M	
6. Internal Audit	M	Idem inherent risk
7. External Audit	L	Idem inherent risk
8. Reporting and Monitoring	M	Idem inherent risk
9. Information Systems	M	
Overall Control Risk	M	Idem inherent risk

H : High
M : Moderate
L : low
N/A : Not Applicable

3. Possible Controversial Aspects:

The most controversial issue is the potential loss of access to certain fishing areas by migrant fishermen. This will be mitigated by including migrant fishermen in comanagement agreements, and by facilitating the reconversion of affected fishermen to other activities.

G. Main Financing Conditions

1. Effectiveness Condition

- The Final version of the Project Implementation Manual is acceptable to the bank, including the Project Implementation Plan, the Manual of Financial and Accounting Procedures, a detailed Procurement Plan for the first 18 months, a Communication Plan, and a Monitoring and Evaluation Manual.
- Four initial intervention sites have been identified for fisheries comanagement.
- Four facilitators have been recruited.
- The recipient has opened a project account for the IDA credit and deposited counterpart funds therein.
- The recipient has opened a project account for the GEF grant and deposited counterpart funds therein.
- Project staff acceptable to IDA are in place in the PCU (see page 22).

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

Board Condition

There will be no board condition.

Other Covenants

- The PCU maintains throughout project implementation records and accounts to reflect in accordance with sound accounting practices the operations, resources and expenditures of the Project.
- Records, accounts, special accounts and SOEs are audited by independent auditors acceptable to IDA throughout project implementation.
- The PCU ensures that the following positions are maintained at all times during project implementation in a manner acceptable to IDA: (i) Program Coordinator, (ii) Fisheries Management Specialist, (iii) Biodiversity Specialist, (iv) Information and Communication Specialist, (v) Community Participation Specialist, (vi) Financial Management Specialist, (vii) Procurement Specialist, (viii) Monitoring and Evaluation Specialist, (ix) Administration and Human Resources Specialist.
- The National Biodiversity Committee provides IDA with annual reports on its activities, during the first quarter of the following year, throughout project implementation.
- In anticipation of the mid-term review, which should take place no more than 30 months after project effectiveness, the PCU commissions the preparation of a mid-term project report by an independent team of reviewers, including an impact of the project's impact on stakeholders. The report shall be distributed to all participants in the mid-term review at least one month prior to the start of the review.

H. Readiness for Implementation

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.

- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

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

Yves Andre Prevost
Team Leader

Mary A. Barton-Dock
Sector Manager

John McIntire
Country Manager/Director

Annex 1: Project Design Summary

SENEGAL: Integrated Marine and Coastal Resources Management Project

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: Reduced poverty level of people dependent on coastal and marine resources Reduced rate of fish resource depletion Habitats critical for preservation of resources are conserved</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: Increase sustainable management of coastal and marine resources in 3 pilot areas by communities and the Government of Senegal.</p>	<p>Outcome / Impact Indicators: Catch per fishing effort improved by 10%-30% from baseline in most community-managed fisheries targeted by the Project, by end of Project. Effectiveness of biodiversity management index improved in the 3 pilot areas by 20% at mid-term review and 50% at the end of the Project, with the active participation of local stakeholders.</p>	<p>Project reports: Monitoring reports by the Department of Marine Fisheries and CRODT. According to the Management Effectiveness Tracking Tool developed by the World Bank and WWF (See note at the end of the logframe).</p>	<p>(from Objective to Goal)</p> <p>Exclusive user rights are effectively granted to Local Fisher Committees. No major uncontrollable events occur, such as climate anomalies or environmental accident along the coast.</p>

	Measures to alleviate the impact of reduction in fishing capacity rated satisfactory by at least 75% of targeted communities.	Independent participatory evaluation of targeted 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>Output Indicators:</p> <p>Local fisheries management sub-projects implemented in 4 pilot sites within 18 months of Project startup, and implemented in an additional 8 pilot sites within the following 18 months.</p> <p>60% of Local Fisher Committees implementing sub-projects comply with sub-project performance targets by end of project.</p> <p>Management plans for at least 2 key fisheries are prepared, and approved by the Conseil National Consultatif des Pêches Maritimes (CNCMP).</p> <p>Participatory assessment of local community involvement in the management of biodiversity in the three pilot areas rated satisfactory at the end of the Project.</p> <p>Management effectiveness of endangered species (marine turtles, manatees, 5 species of water and sea birds) improved by 50% by the end of the Project.</p> <p>The Cap-Vert Peninsula 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 update</p>	<p>Project reports:</p> <p>Signed agreements, progress reports from the Department of Marine Fisheries, and independent evaluation</p> <p>Monitoring reports from the Department of Marine Fisheries</p> <p>Monitoring reports from the Department of Marine Fisheries</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>Stakeholders in targeted fisheries agree on measures required to sustainably manage marine and coastal resources.</p> <p>Implementation of subprojects not delayed by bureaucracy.</p> <p>Expected benefits from biodiversity management are fulfilled.</p> <p>Local level stakeholders are committed to sustainably managing biodiversity.</p> <p>Bureaucratic procedures do not delay the establishment of the Cap-Vert Peninsula Biosphere Reserve.</p>

<p>Component 3: The Project Coordination Unit effectively manages the Project</p>	<p>reports prepared on an annual basis.</p> <p>Information sharing by Project Coordination Unit (web site, newsletter, direct requests) rated satisfactory by at least 75% of users, at mid-term and at the end of the Project.</p> <p>The awareness of stakeholders in pilot areas regarding the causes and proposed remedies to coastal and marine resource crisis is increased twofold prior to mid-term review.</p> <p>85% of quarterly and six-monthly progress reports prepared on time.</p> <p>Coordination subcommittees established with the Senegal River Basin Project, the Protection of the Canary Current Large Marine Ecosystem (LME) Project, and the Project to enhance the conservation of the critical network of sites required by migratory waterbirds on the African/Eurasian Flyways.</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 of impact by World Bank</p> <p>Documentation of coordination meetings, including decisions agreed.</p>	<p>PCU can retain competent staff throughout Project implementation.</p>
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Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
Project Components / Sub-components:	Inputs: (budget for each component)	Project reports:	(from Components to Outputs)
Component 1: Management of Sustainable Fisheries	US\$6.53 million		
1.1 National level activities to improve fisheries management	US\$1.38 million		
1.2 Promotion and coordination of local comanagement initiatives	US\$4.67 million		Community members agree on subprojects. Subproject performance targets are fulfilled.
1.3 Institutional strengthening and capacity building	US\$0.48 million		Stakeholders agree through CNCPM to reduce overcapacity and overfishing.
Component 2: Conservation of Critical Habitats and Species	US\$6.02 million		
2.1 Managing Ecosystems	US\$4.45 million		
2.2 Strengthening the biodiversity Conservation framework	US\$1.57 million		
Component 3. Program management, M&E and Communication	US\$3.94 million		
3.1 Monitoring and evaluation	US\$2.8 million	Quarterly and six-monthly reports	
3.2 Coordination	US\$0.1 million		
3.3 Communication	US\$0.3 million		
3.4 Sub-regional coordination.	US\$0.1 million		
3.5 PPF	US\$0.66 million		

Management Effectiveness Tracking Tool. The tool has been developed to help track and monitor progress in the achievement of the World bank/WWF Alliance worldwide protected area management effectiveness target. The tracking tool has been developed to provide a quick overview of progress in improving the effectiveness of management in individual protected areas, to be filled in by the protected

area manager or other relevant site staff. It has been designed to be easily answered by those managing the protected area without further additional research. The tracking tool consists of a two parts: (i) a data sheet that details key information on the site, its characteristics and management objectives; and ii) an assessment form consisting of 30 questions that can be answered by assigning a simple score between 0 (poor) to 3 (excellent).

Annex 2: Detailed Project Description

SENEGAL: Integrated Marine and Coastal Resources Management Project

Project components

The project will comprise three components:

1. Management 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\$16.49 million, of which IDA would fund US\$10 million, GEF would fund US\$5 million, and the Government of Senegal would fund US\$1.49 million.

By Component:

Project Component 1. Management of Sustainable Fisheries - US\$6.53 million

The purpose of this component is to increase the sustainability of fisheries through actions at the national and local levels. The component would include 3 sub-components.

Sub-Component 1.1: National Level Activities to Improve Fisheries Management (US\$1.38 million)

The objective of the sub-component is to support actions at the national level to enable implementation of area-based comanagement initiatives at the local level, particularly targeting demersal species, as a critical part of an effective national fisheries management system. Up-front, the Project would fund the preparation of a strategic framework for the management of Senegal's fisheries, in support of the activities of the Special Commission. The framework would guide the design and implementation of management plans for 5 groups of species. Because the choice of management system is fundamental for the effective management of Senegal's fish resources, the project would broaden and support the necessary process of stakeholder discussion and consensus building on this issue, and on the design and implementation of the management plans and other critical fisheries management actions. It would support the *Conseil National Consultatif des Pêches Maritimes (CNCMP)* as the forum of choice for national sector management discussions, and enable it to seek independent advice or initiate independent studies on this or related subjects.

The project would also support the development and implementation of a national communications strategy to bring key sector issues to the attention of the general public, and encourage public interactions at the local level. The Project would support an integrated national research program on specific demersal fish stocks.

Finally, the project would support a national registration program of pirogues, taking stock of the results of a recently completed Swiss funded pilot program.

Activity 1.1.1: Evaluation of Policy Options

The Project would fund DPM to recruit an internationally recognized team of consultants to conduct an in depth evaluation of fisheries sector policy options for Senegal. The evaluation would start immediately after Project effectiveness, and would help orient the decisions expected from the Special

Commission.

The consultants would: (i) review and analyze past and present policy choices, the prevailing institutional framework and management system, and evaluate the biological, economic and social impacts of these choices, (ii) taking example on other countries, identify and analyze potential policy options, the institutional and regulatory changes each would require, and evaluate the biological, economic and social costs and benefits of each option.

The evaluation would take stock of ongoing activities such as the study on the establishment of a user-rights system, and pilot efforts to establish Local Artisanal Fisheries Councils. The evaluation would consider all possible options available, including comanagement and the use of area-based comanagement.

Resources would also include targeted technical assistance (TA) to help supervise the team of consultants, and support for consensus building.

Activity 1.1.2: Fisheries Management Plans

The COMO would within 6 months after Project effectiveness initiate the preparation of fisheries management plans, as required by the 1998 Fisheries Law. Plans for at least 2 key fisheries or groups of species would be prepared by an internationally recognized team of consultants, in cooperation with CRODT. The Government would select the target fisheries from a list that has already been agreed to by IDA. Each plan would include: (i) Total Allowable Catch (TAC) for the target group of species, (ii) an allocation of available resources between artisanal and industrial fleets, (iii) limitations on industrial fishing effort, (iv) reduction targets in fishing capacity, (v) local management measures, (vi) Monitoring, Control and Surveillance measures, and (vii) a process to identify and provide compensation to fishermen that would have to reduce their fishing effort or leave the sector because of implementation of the plan, (vi) and identification of potential impacts on women. *Final draft management plans would be ready within 18 months of Project effectiveness, and approved and implemented by mi-term review.*

The Project would also support an annual evaluation of the implementation of each plan, and an annual adjustment in light of evaluation results.

Resources would include consultants, and targeted TA to assist in overseeing the preparation, implementation, evaluation and revision of the plans.

Activity 1.1.3: Support to the National Consultative Council for Marine Fisheries (CNCMP)

The Project would support the CNCMP to function as the primary negotiation and consensus-building forum among stakeholders for each of the key fisheries management plans, including Local Artisanal Fisheries Councils and Local Fisher Committees. The CNCMP would be called upon to review the final draft plans and to suggest changes and amendments. The COMO, with the help of the targeted TA mentioned in Activity 1.1.1 and 1.1.2, would oversee the finalization of the plans on the basis of the CNCMP review.

Resources would include operating expenses, specialized studies, TA, and training.

Activity 1.1.4: Awareness Building

The Project would fund a consultancy to develop an information, education and communication plan to increase awareness and understanding regarding the principles and benefits of comanagement systems promoted by the Project, including area-based comanagement. The plan would be developed in close

cooperation with local NGOs such as the Océanium and WWF, would take into account ongoing IEC activities under the PAPA-Sud (*Projet d'Appui à la Pêche Artisanale*), and would constitute a key building block of the Project's overall Communication Plan. Awareness campaigns would target: (i) fisher communities in the three pilot areas, including the members of Local Fisheries Councils and Local Fisheries Committees, (ii) professional organizations involved in the fisheries sector, such as the FENAGIE, and (iii) the general public at the national level.

Resources would include consultants, and support for conducting the campaigns.

Activity 1.1.5: Research on Demersal Fish Stocks

The COMO, with the support of the previously mentioned targeted TA, would design within 3 months of Project effectiveness an incremental program of fisheries research specifically targeted at defining the life cycles of key demersal species. The COMO would initiate a contract with the CRODT within 6 months after Project effectiveness to manage the implementation of this program.

The program would also: (i) identify the relationships between key demersal species and the overall marine environment, (ii) consider the impact of external factors such as marine protected areas, pollution and other forms of human interference, (iii) assess the socioeconomic impact of ongoing management efforts, to provide a framework to evaluate the socioeconomic impact of local and national management plans.

The program would provide for the integration of the results from the local level participatory fish stock evaluation programs that would take place at the 12 pilot sites of the project (*Activity 1.2.4*), and with the Ecosystem Management Plans that will be prepared under Component 2.

The research program would also complement ongoing, routine assessments of specific demersal species. In addition, the working group would create an operational planning framework for research designed to support national level management plans, and local level comanagement, including area-based comanagement.

Resources would include TA, support for incremental research and research equipment.

Activity 1.1.6: Registration of Pirogues, and Monitoring of Industrial Fleet

No national system exists yet to register the more than 10,000 pirogues operating in Senegalese and foreign waters. Registration is needed to monitor artisanal fishing operations as part of national and local management plans. Registration also supports the collection and interpretation of fisheries statistics, improves the quality of research data, and facilitates the creation of area-based rights for fisheries.

The project would program and implement a nationwide system of registration, based on the findings and recommendations of the recently completed Swiss supported pilot project. This activity would support a nationwide process of consultation with fishermen, boat owners and other stakeholders to draft a revised decree that would govern the future registration program, create and implement an information communication campaign targeting artisanal fishermen, supply registration plates and the electronic registration system of the Ministry of Maritime Economy, train local and regional Ministry staff, and set up a system of evaluation and control. This component may also receive parallel funding from Switzerland, which could finance electronic equipment to identify individual boats and electronic registration cards. Resources would include TA, and support for consultations and equipment.

It is critical to Project success that Government be capable of monitoring the movements of industrial vessels into the areas reserved for artisanal fisheries. Accordingly, agreement was reached during

negotiations that all industrial vessels would be equipped with satellite-based, vessel monitoring system (VMS) and that the Ministry of Maritime Economy would be capable of monitoring the movements of industrial vessels, by the time of the mid-term review of the project.

Sub-Component 1.2: Promotion and Coordination of Local Comanagement Initiatives
(US\$4.67 million)

The Project would support Government efforts to test local comanagement of demersal species in the three designated pilot areas: the Senegal River Delta, the Cap-Vert Peninsula, and the Saloum River Delta. In line with the 1998 Fisheries Act, **Local Artisanal Fisheries Councils** have the power to approve comanagement proposals originating from fisher communities. According to the current draft decree regarding the creation and organization of these councils, the Senegal River Delta pilot area would be covered by two councils, the Cap-Vert Peninsula by 8 councils and the Saloum River Delta by 4 councils.

The Project would support the establishment of **Local Fisher Committees**, either as associations (Loi de 1901), or cooperatives. Fisher Committee membership would be limited to active or retired fishermen. Each Committee would target one or more demersal fish species. Committee objectives would include: (i) resolving local conflicts over fish resources, (ii) sustainably managing fish resources, by limiting fishing effort or allowable catch, (iii) equitably allocating allowable catch among registered members, (iv) protecting critical breeding or nursery grounds, and (v) optimizing member income from the sale, processing, and marketing of fish products.

The Project would support Fisher Committees to identify and formulate **local fisheries comanagement initiatives**. The initiatives might include: (i) restrictions on fish sizes or on fishing gear that go beyond existing fishing regulations, (ii) limits on the daily catch, the number of daily trips, and daily landings, (iii) allowable catch within a specific marine area, (iv) seasonal closures, and (v) exclusion zones or the establishment of Marine Protected Areas. Some of the initiatives might involve the recognition of exclusive user rights within specific marine areas next to the fisher communities involved.

Local Fisher Committees would submit their comanagement initiatives to the relevant Local Fisheries Council, including incremental monitoring, control and surveillance measures to ensure compliance with initiatives, and an estimated budget. The project would provide support to Local Councils to package the initiatives originating from within their jurisdiction into **annual management plans** for demersal species, and to submit these plan to the Department of Marine Fisheries for approval. The original comanagement initiatives would be attached to the annual management plans. Following approval, the Project would fund **sub-projects** to assist Local Fisher Committees in the implementation of their comanagement initiatives.

The management plans would spell out the **Monitoring, Control, and Surveillance** (MCS) measures required to ensure compliance of fishing activities in the Council's area of jurisdiction with fisheries regulations, including Council by-laws and restrictions associated with comanagement initiatives. Local level MCS activities would be coordinated with national level MCS activities.

The Project would support DPM to recruit and train **facilitators**, to assist communities in the creation and operation of Fisher Committees, and in the formulation, approval and implementation of their comanagement initiative.

Facilitators, in collaboration with staff from the *Centre de Recherches Océanographiques de Dakar-Thiaroye*, would assist Local Committees in defining tailor-made **participatory fish stock evaluation program** in support of their comanagement initiative. Results of this program would enable Committees to adjust the comanagement initiatives, and for Local Councils and the DPM to monitor

their performance.

Successful implementation of the Project would require the prior establishment and effective operation of Local Fisheries Councils in the pilot areas. It was agreed during negotiations that Councils are unlikely to be in place at Project effectiveness in the Project's pilot areas, and that initially the comanagement initiatives in the first four pilot sites would be directly submitted to the Minister of Maritime Economy for approval. It was also agreed that Council by-laws would ensure reflect the following concerns: (i) at least one representative of each Local Fisher Committee within their jurisdiction is a permanent member of the Council, (ii) at least 4 Local Fisher Committee representatives participate in Council meetings when local management initiatives are discussed, and in any working group established by the Council to prepare annual management plans, and (iii) all comanagement proposals submitted by Local Fisher Committees in their area of jurisdiction are given appropriate consideration and are incorporated into annual fisheries management plans.

Activity 1.2.1: Selection of Initial Pilot Sites

A team consisting of the COMO Coordinator, the Officer in charge of Artisanal Fisheries in the Department of Marine Fisheries, the Officer in charge of the relevant *Service Départemental des Pêches et de la Surveillance*, and the Fisheries Management Specialist from the UCP, with the support of an international expert in fisheries comanagement, would select 2 pilot sites in the Cap-Vert Peninsula pilot area and 2 pilot sites within the Saloum River Delta pilot area prior to Project effectiveness. The selection team would take stock of the Fisheries Baseline Study funded by the PHRD Grant, ongoing work by the *Parc National des Îles de la Madeleine* with fishing communities, and prior work by IUCN in the Saloum River Delta. The team would visit all fishing communities within the two pilot areas and using rapid appraisal techniques rate them according to the following criteria: (i) the presence nearby of localized demersal fish stocks that are mainly exploited by the community, (ii) a strong desire on the part of the community to implement comanagement initiatives for these fish stocks, (iii) the expected benefits from the comanagement initiative, (iv) potential risks associated with the comanagement initiative. The team would then select the communities where comanagement initiatives are most likely to succeed. The selection team would then inform the selected communities, explaining the steps that would be followed before their initiative is officially recognized.

Following selection of the pilot sites, the COMO would initiate the recruitment of local consultants to prepare a social, economic and political baseline studies for each pilot site, to identify and minimize the risks that might be associated with the implementation of the proposed comanagement initiative. The baseline would include: (i) an evaluation of the number of fishermen concerned by the initiatives, (ii) the importance, position and role of this group within the community, (iii) the identification of fishermen outside the group that might be affected by the proposed measures, (iv) the relationship of the initiative to women and other groups within the community, (v) a poverty profile of the fishermen behind the initiative and of their community of origin, (vi) the identification of potential risks, including the causes of past conflicts, and the formulation of mitigation measures. At the start of their work, the consultants would explain its purpose to the target communities. The baseline studies would be completed within 3 months after Project effectiveness.

Activity 1.2.2: Identification of Local Comanagement Initiatives

The 4 initial facilitators would undergo in-country orientation and would visit comanagement initiatives in a foreign country for 2 months, before being posted in the field. Training would cover: (i) the principles of comanagement, including scientific, technical, social and legal aspects, (ii) the objectives, activities and implementation calendar of the Project, (iii) Project reporting requirements, including monitoring and evaluation, and key performance indicators, (iv) the use of communication and

participation methods. The international consultant would: (i) conduct the initial orientation, (ii) draft a Facilitator Procedures Manual, (iii) design a communication strategy and communication material for use by the facilitators in their respective pilot sites, and (iv) provide direct technical assistance to the facilitators during the first 8 months after their posting in the field.

Following their training, one facilitator would be posted in each of the pilot sites within 4 months after Project effectiveness. The Project would provide the facilitators with basic means of transport and communication, office equipment and operating expenses. The Project would also fund the construction of a *Maison du Pêcheur* in each pilot site that would include office space for the facilitator as well as common space and information center for the fisher community. Construction of the facility would start within 2 months of Project effectiveness and would be supervised by the COMO-Pêche and the UCP.

The facilitators would: (i) inform fisher communities about comanagement possibilities, by presenting demonstration videos or by organizing visits to ongoing initiatives, (ii) explain the approval process for comanagement initiatives, including the role of the Local Fisheries Councils, (iii) explain the link between fisheries comanagement, ecosystem management (Component 2), and reconversion measures that would be funded through AFDS, (iv) help communities define realistic management objectives, (v) assist communities in formulating their comanagement initiatives, (vi) facilitate the registration of the Local Fisher Committees that would manage the initiatives, (vii) identify monitoring, control and surveillance needs to ensure compliance with the initiative, including equipment needs (*Activity 1.2.3*), (viii) develop jointly with CRODT a participatory fish stock evaluation program for local target species (*Activity 1.2.4*), (ix) assist communities in submitting their comanagement initiatives to the relevant Local Council, (x) facilitate access to resources managed by AFDS, (xi) report on implementation progress of the initiative to the DPM.

The facilitator would help ensure that Local Fisher Committees activities are equitable and transparent. He would organize training in conflict resolution, as well as record keeping, to ensure that the Committees' share of responsibility is well managed. He would facilitate contacts with locally elected officials, with ANCAR (on land policy and agricultural development), with the *Centres de Perfectionnement Rural*, with NGOs and Government agencies, to assure a broad institutional background to efforts to reconvert fishermen. The facilitator would provide or organize training to stakeholders to broaden their knowledge base and thus increase institutional capacity. As a corollary activity, stakeholders would be encouraged to participate in monitoring and evaluation activities, including the monitoring of marine and coastal fish resources. Each Committee would be encouraged to use rapid appraisal techniques in order to record and document the specificities of each site. The Project would also promote lateral experience sharing between Local Fisher Committees from different pilot sites, to accelerate the learning process.

The Local Fisher Committees in the 4 initial pilot sites would submit their respective sub-project proposals to the MME within 9 months of Project effectiveness. MME would approve eligible sub-projects within 3 months of their presentation.

During sub-project implementation, the facilitator would carry out a training needs assessment in the target fisher community to determine whether literacy classes are needed to strengthen management and reporting capacity needed to assure sustainability and consistent participation.

The Facilitator would seek ways to broaden women's participation in economic activities in the fisheries sector, as well as to ensure that critical actors at all levels receive some orientation on gender analysis.

For initiatives that require the construction of artificial reefs, the facilitator would ensure that the request is passed on to the DPM for consideration in the Project.

Resources would include training, TA, local construction, equipment, and operating support to

facilitators and Local Fisher Committees.

Activity 1.2.3: Local Level Monitoring, Control, and Surveillance (MCS)

The Project would support local level MCS measures required to ensure compliance of fishing activities within the geographic footprint of the comanagement initiative with fisheries regulations, including Council by-laws and restrictions associated with comanagement initiatives. These measures may include: (i) monitoring of fish catches and landings, (ii) patrols by law enforcement officers, (iii) the surveillance of Council waters by fishermen, and (iv) procedures to call on formal MCS capacity when trawlers intrude in prohibited areas.

Resources would include boats, equipment and operating support to Local Fisher Committees.

Activity 1.2.4: Participatory Fish Stock Evaluation Programs

The Department of Marine Fisheries would contract CRODT to prepare local fish stock evaluation programs in response to information needs identified by the facilitators. CRODT would engage and oversee scientists to implement these programs. The programs would systematically rely on local fishers for the collection of data, to benefit from their knowledge of local fish resources. Programs would start within 6 months of Project effectiveness. CRODT would develop a methodology to evaluate fish stocks in shallow waters.

For each pilot site, the program would include: (i) a baseline assessment of the stock and life cycle of fish resources targeted by the comanagement initiative, (ii) a baseline assessment of the local marine ecosystem, (iii) the determination of the geographic footprint of the proposed comanagement initiative, (iv) a socioeconomic analysis for the targeted resources, (v) a system for fishermen to monitor targeted resources, and (vi) yearly evaluations of the impact of the comanagement initiative on targeted resources.

CRODT would ensure the coordination of local research efforts with national level research efforts targeting demersal fish stocks, funded by the Project or more generally by the Ministry of Maritime Economy.

The project would annually allocate an average of \$15,000 for data collection and research for each site. Resources would include TA, support for Local Fisher Committees, and research equipment adapted to shallow waters.

Activity 1.2.5: Support to Local Fisheries Councils

The Project would support the preparation of the Règlements Intérieurs for the Local Fisheries Councils that include at least one pilot site, including if necessary recourse to local legal consultants. The Règlements Intérieurs would define basic parameters for the Council, such as: Council procedures, main fish species and fisheries concerned, area covered, and local MCS measures.

The Project would also support the preparation of annual management plans by the Councils, if necessary with the support of the international consultant recruited by the Project. Each management plans would integrate the comanagement initiatives submitted by Local Fisher Committees into a coherent management plan for the Council's area.

Finally, the Project would fund independent evaluations of the implementation of the annual management plans.

Resources would include TA, equipment and operating costs.

Activity 1.2.6: Monitoring and Evaluation

The COMO would initiate the preparation of a system to monitor the performance of comanagement initiatives by the DPM, its facilitators, and CRODT, and with the support of the international expert in fisheries comanagement, within 6 months of Project effectiveness. Indicators for each pilot site and comanagement initiative would be developed in partnership with the concerned Local Fisher Committees. The draft system would be available within 12 months of Project effectiveness. The DPM, with the participation of the Local Fisher Committees, would use the monitoring system to measure annual progress in achieving the objectives of the subproject.

Resources would include TA and operating costs.

Activity 1.2.7: Evaluation of the Performance of Comanagement Initiatives

The COMO would initiate an independent in-depth evaluation of the implementation of comanagement initiatives at the four initial pilot sites, within 24 months of Project effectiveness. Completion of the evaluation and incorporation of its recommendations into the design of comanagement initiatives by the DPM would be the trigger for adding eight additional pilot sites. Selection of these new sites would be as in *Activity 1.2.1*. Selection would be completed before the mid-term review, and the review would confirm adjustments to the initial design and the decision to increase the number of pilot sites from four to eight.

Depending on the workload, logistics and geography, each of the 4 initial facilitators would support the development of comanagement initiatives in an additional pilot site. The DPM would also recruit at least two additional facilitators.

The COMO would initiate a second in-depth evaluation of the implementation of comanagement initiatives at the 12 pilot sites, within 48 months of Project effectiveness. This second evaluation would identify adjustments that need to be made to the legal, regulatory and institutional framework for fisheries management, to better support comanagement initiatives and to incorporate them into the national fisheries management system. As necessary, the Project would then support the implementation of these adjustments.

Resources would include TA and operating costs.

Sub-component 1.3 Institutional Strengthening and Capacity Building (US\$ 0.48 million)

Activity 1.3.1: Support to the COMO-Pêche

Implementation of the proposed area-based comanagement system would also require capacity within the Ministry of Marine Economy. The Project would support the establishment of an implementation unit (*COMO-Pêche*) to manage the implementation of Component 1. Most particularly, the COMO would: (i) oversee the program of activities at each pilot sites, (ii) direct CRODT in designing and implementing the national and local research programs supported by the project; (iii) monitor and evaluate the effectiveness of the proposed comanagement system and MCS measures at the pilot sites, (iv) adjust the comanagement system as required, (v) help the Ministry of Marine Economy adjust its institutional structure and regulatory framework to the new system.

Activity 1.3.2: Strengthening Capacity of the Ministry of Marine Economy and CRODT in Designing Participatory Research Programs for Comanagement Initiatives

The project would support the training of staff from MME and CRODT involved in the implementation

of Component 1, to accommodate the introduction of comanagement and participatory research in their work programs. A special training program involving on-the-job training and the use of case studies would be designed by a consultant to train staff.

Activity 1.3.3: Capacity Building in the Design and Implementation of Comanagement Initiatives

The COMO would establish a program to inform and train representatives of professional organizations about the potential benefits and constraints of comanagement experiences in Senegal and abroad, including area-based comanagement. The training program would particularly aim to prepare professional organizations to play an effective role in Local Artisanal Fisheries Councils, and in playing a more effective role in CNCPM.

Project Component 2. Conservation of Critical Habitats and Species - US\$6.02 million

The purpose of this component is to improve the long-term management of ecosystems in the three designated pilot areas: the Senegal River Delta, the Cap-Vert Peninsula, and the Saloum River Delta. This would be done by: (i) supporting ecosystem management in each of the pilot areas, according to an ecosystem approach, and (ii) restructuring the biodiversity management framework, to overcome the constraints that have limited the effective management and protection of ecosystems nationwide.

Sub-Component 2.1: Managing Ecosystems (US\$4.45 million)

The Project would support Government's choice of **Biosphere Reserves** as the key instrument to manage ecosystems in the three designated pilot areas. More specifically, the Project would strengthen the existing Saloum Delta Biosphere Reserve, provide assistance to the proposed Senegal River Delta Biosphere Reserve, and help establish the Cap-Vert Biosphere Reserve. Each of these Biosphere Reserves would consolidate existing protected areas that would serve as anchor sites for ecosystem management activities.

In all three instances, the Project would help to put in place an **Ecosystem Management Committee** with majority representation by local authorities, and would support its operation. These committees would bring together representatives of local management committees, including management committees for protected areas. As necessary, the Project would support the establishment of such site committees. The Ecosystem Management Committee would be chaired by a representative of the local communities; the Commissioner in charge of one of the protected areas included in the Biosphere reserve would serve as Secretary. The DPN would designate a Deputy Commissioner for the protected area concerned, to allow the Commissioner to fulfill this duty. Local authorities would include Regional Development Agencies, the Rural Community Councils, Local Fisheries Management Committees described in Component 1 of the Project, and other community-based organizations (CBOs). The other members would consist of: (i) representatives from Government departments concerned with the management of the site's ecosystem and biodiversity, such as the Commissioners of the protected areas within the pilot area, officers from the Department of Forestry, officers from the Ministry of Fisheries, representatives of local fisheries councils, comanagement facilitators mentioned in Component 1, and regional officers from the Ministry of Agriculture, and (ii) representatives from other projects and from NGOs involved in the pilot area.

The Ecosystem Management Committees would allow stakeholders to influence the management of ecosystems and biodiversity within the relevant pilot area, most particularly by reviewing the activities funded through the Project. The Committee would oversee the preparation and monitor the implementation of an **ecosystem management plan** for each of the pilot areas that would reflect a

model of sustainable economic use of natural resources, and biodiversity conservation. The plans would set goals, prioritize investments and recommend specific management activities.

Each plan would consolidate existing plans for the anchor sites. As necessary, the plan would also support the preparation of management plans for these sites, or update existing management plans. Measures under the plan would include: (i) the rehabilitation and maintenance of infrastructure in existing protected areas, (ii) the establishment of Community Nature Reserves or Marine Protected Areas within the Biosphere Reserve, (iii) investment, including small works, to maintain or rehabilitate ecological functions in the Biosphere Reserve, (iv) agreements for the comanagement of coastal and marine resources, to provide environmentally sustainable sources of revenue for communities living in and around protected areas, (v) participatory assessments and monitoring of biodiversity within the Biosphere Reserve, (vi) participatory surveillance and enforcement of biodiversity protection, (vii) measures to involve communities in providing services to tourists, (viii) capacity and awareness building for local stakeholders, to fulfill the above points, and (ix) a system to monitor and evaluate performance and impact during the implementation of the plan.

Preparation of the plan would also include a detailed baseline assessment of ecosystems and biodiversity, including mapping of natural habitats, most particularly marine habitats, in the Biosphere Reserves.

The DPN would supervise the preparation of these plans. Each plan would be prepared by a competitively selected consultant. The ToRs would be finalized in close consultation with local stakeholders. The relevant Ecosystem Management Committee would review the draft plan, recommend changes and approve the final version.

In the meantime, **interim measures** have been identified for each of the three pilot areas, which include expenditures and activities in the annual work plans of protected areas that have remained unfunded, as well as measures to increase the involvement of neighboring populations in the sustainable management of marine and coastal resources, such as ecotourism, participatory biodiversity assessments and local surveillance committees.

The Project would fund the implementation of the ecosystem management plan for the period remaining until Project completion. The list of activities to be funded within the plan would be finalized during the mid-term review.

2.1.1 Senegal River Delta

The Government of Senegal and the Government of Mauritania have agreed to establish a transboundary Biosphere Reserve in the Senegal River Delta that would include the *Parc National des Oiseaux du Djoudj* (PNOD), the *Réserve Spéciale de Faune du Ndiaël*, the *Réserve Spéciale de Faune de Geumbeul*, and the *Parc National de la Langue de Barbarie* in Senegal, and the *Parc National du Diawling* in Mauritania. A joint submission to UNESCO for designation of the reserve is expected in May 2005. An option being considered is the inclusion of the Town of Saint-Louis, which is already recognized as a World Heritage Site by UNESCO.

The Project would help establish a Delta Ecosystem Management Committee that would address ecosystem issues on the Senegalese side of the delta. The Committee would be chaired by a local representative selected by the *Comité Régional de Développement* (CRD) of Saint-Louis. The PNOD Commissioner would serve as Committee Secretary. It would include key regional players, such as the *Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal* (SAED), *Organisation pour Mise en Valeur du Fleuve Sénégal* (OMVS), the *Projet d'Aménagement et Développement Intégré du Ndiaël* (PADIN), the PGIES, fisher communities such as Guet Ndar, and a

representative from the Saint-Louis Fisheries Council. The consultative committees for the 4 protected areas would be represented in the Delta Ecosystem Management Committee. Members of the Ecosystem Management Committee would sit on the governance body of the proposed Biosphere Reserve.

The Project would fund the preparation of a management plan for the Senegalese part of the proposed Biosphere Reserve, building on: (i) the draft management plan for the PNOD and its buffer zone, prepared with GTZ support, (ii) the management plan for the PNLB, initiated with the support of AFD, (iii) proposals prepared by the *Projet d'Aménagement et Développement Intégré du Ndiaël* (PADIN), (iv) studies by the *Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal* (SAED), (v) baseline studies of the Lower Delta funded under the Long Term Water Supply Project (LTWS), (vi) PGIES activities in the area of the *Réserve Spéciale de Faune de Geumbeul*, (viii) the WWF proposal to establish a Marine Protected Area off the coast of Saint-Louis.

The overriding concern of the plan would be the rehabilitation and maintenance of the ecological functions in the delta that are linked to the seasonal floods of the Senegal River, including nursery grounds for marine species, recession rangelands, forest groves of *Acacia nilotica*, and seasonal ponds used by palearctic migrants for wintering and by afro-tropical water birds for breeding. The biggest planning challenge is the interface between the maintenance of ecological functions and the requirements of irrigated agriculture, which is the dominant economic activity in the delta. A second challenge is the linkage between biodiversity conservation along the coast and the activities of fishermen based in Saint-Louis.

The management plan would be completed within 18 months of project effectiveness, giving enough time for the LTWS studies to be concluded. It would include completion of the plan for the PNLB, and updates for the PNOD and Ndiaël plans. It would include measures to protect breeding sites for sea turtles and sea birds. Measures proposed in the plan would also seek to avoid the spread of invasive water plants and to reduce exposure of inhabitants of the delta to bilharzia. Finally, the management plan would take into account the plan prepared by Mauritanian authorities for their part of the delta.

Interim measures to be implemented while the plan is prepared include the renewal of key equipment and the rehabilitation of infrastructure in the 4 existing protected areas, participatory monitoring of biodiversity, most particularly sea turtles, sea birds and water birds, awareness campaigns for local stakeholders, the promotion of ecotourism and local surveillance committees.

2.1.2 Cap-Vert Peninsula

The inhabitants of Yoff have unsuccessfully attempted to create a Biosphere Reserve centering on the Island of Teunguène in 1996. Although this attempt expressed deep concerns on the part of the Lébou community regarding the degradation of coastal habitats, the proposal was rejected because it did not make a clear link between these concerns and the management of marine and coastal resources. The current proposal overcomes this problem by broadening the geographic imprint to include three existing protected areas, the *Parc National des Îles de la Madeleine* (PNIM), the *Réserve Naturelle de Poponguine*, the *Réserve Naturelle Communautaire de la Somone*, and the *Forêt Classée de Mbao*, by involving all of the fishing communities in the Cap-Vert Peninsula (Yoff, Ngor, Ouakam, Soumbédioune, Hann, Thiaroye, Mbao, Bargny, Rufisque, Yenne, Poponguine and Somone), and by including the Baie de Hann, which constitutes a major nursery ground for Senegal's fisheries. The proposed Reserve would include 70 km of shoreline from Cambérène to Somone, including all of the shoreline of the City of Dakar (see Annex 11 for further details), and the marine habitat up to a distance of 6 nautical miles from the coastline. The estimated area of the reserve would be approximately 1,000 km². The Reserve would include the Island of Ngor and the Island of Gorée, in addition to the Island of

Teunguène and the Îles de la Madeleine. The focus would be on the Peninsula's marine habitat, but portions of the land mass would be included, if determined to have a direct incidence on the marine habitats.

The Project would help establish the Cap-Vert Marine Ecosystem Management Committee (*Comité de Gestion des Écosystèmes Marins de la Presqu'Île du Cap-Vert*: COGEM). A local representative selected by the traditional leadership of the Lebou community would chair the Committee. The PNIM Commissioner would serve as Committee Secretary. Committee membership would include the custodians of the 12 Lebou coastal holy sites, representatives of the Advisory Committees set up under the initiative of the PNIM Commissioner, representatives of the *Collectif des femmes pour la protection de la nature* (COPRONAT) in Poponguine-Somone, representatives of fisher communities, the city of Dakar, local councils, the Island of Gorée, the airport, the harbor, hotel owners, the *Haute autorité de la corniche*, the *Société Immobilière du Cap Vert* (SICAP), the *Office National d'Assainissement* (ONAS), NGOs, and representatives of Government departments concerned with the management of the Cap-Vert peninsula's coastline. The Committee would serve as a forum to express concerns about the degradation of coastal habitats and to identify solutions.

The Project would fund the preparation of a management plan for the Cap-Vert Peninsula Biosphere Reserve, building on: (i) the draft management plan for the PNIM prepared with AFD support, (ii) the study on the *Espace Naturel Communautaire de Popenguine*, funded through the PHRD grant, (iii) the environmental audit of the Somone River basin, funded under the PHRD, (iv) proposals by the Océanium to establish Marine Protected Areas in Bargny-Rufisque, along the coast of Soubédioune-Ouakam, and next to the Island of Gorée, (v) the initiative by the Island of Gorée to create a Community Marine Area, (vi) efforts by the local government of Hann to clean up its shoreline, (vii) measures funded by the Long Term Water Supply Project to control the flow of industrial and domestic sewage into the Baie de Hann, and (viii) the *Aire du Patrimoine Communautaire de Teunguène-Yoff*.

The overriding concern of the plan would be the protection of fish breeding and nursery grounds along the coastline, with a particular focus on the marine biodiversity endemic to the rocky bottoms of the Peninsula, including remnants of coral in the vicinity of the Island of Gorée. The focus in the terrestrial portion of the Reserve would be the preservation of the Îles de la Madeleine as a breeding site for Tropicbirds and Greater Cormorants, the preservation of coastal marches used by waders, and the protection of sea turtle breeding sites in the Yenne-Somone portion of the Reserve. The biggest challenge would be to get local fishermen to buy into the Biosphere Reserve Concept as a means to increase the sustainability of local fisheries. A second critical challenge would be the overbearing proximity of the city of Dakar and its expanding suburbs. The Project would present the establishment of the Biosphere Reserve as an opportunity to improve the quality of life of coastal populations.

The ecosystem management plan would be completed within 18 months of project effectiveness, and the Government of Senegal would submit the proposal to UNESCO to designate the Reserve prior to the mid-term review. The plan would include a management plan for the Somone-Popenguine CNR. Interim measures to be implemented while the plan is prepared include the renewal of key equipment and the rehabilitation of infrastructure in the 2 existing protected areas, support to the establishment of Marine Protected Areas in Bargny and Gorée, support to the Gorée CNR and possibly support to a CNR in Ouakam-Yoff, awareness campaigns and participatory assessments of marine biodiversity.

2.1.3 Saloum Delta

The Saloum Delta Biosphere Reserve was established in 1980, with the *Parc National du Delta du Saloum* (PNDS) at its core. The Government has announced its intention to expand the Reserve to

include the adjoining *Réserve Naturelle Communautaire de Palmarin*. Once this process has been completed, the Government of Senegal and the Government of The Gambia intend to create a transboundary Biosphere Reserve by adding the Niimi National Park to the Saloum Delta Biosphere Reserve. The Project would support this two-step process and assist the Government of Senegal in the management of its portion of the Reserve.

The Project would help establish the Saloum Delta Marine Ecosystem Management Committee (*Comité de gestion des Écosystèmes Marins du delta du Saloum*: COGEM-Saloum). The chairman would be selected by local authorities. The PNDS Commissioner would serve as Committee Secretary. Committee membership would explicitly include representatives of the Local Fisheries Committees established under Component 1, as well as the comanagement facilitators, as well as other stakeholders. The key challenge for this Committee is to establish a dialogue between fishermen and conservation interests in the Saloum River Delta.

The Project would fund the preparation of a management plan for the Senegalese portion of the Saloum delta Biosphere Reserve, building on: (i) the draft management plan for the existing Biosphere Reserve and the draft Code of Conduct, prepared by IUCN, (ii) activities of WAAME, (iii) activities of the PGIES to create a Community Nature Reserve in Djinack, (iv) the UNEP/GEF Project for Enhancing conservation of the critical network of sites required by migratory water birds on the African/Eurasian Flyways, (v) research activities of CRODT, such as the *Etude des pêcheries de la Réserve de Biosphère du Delta du Saloum*, and the *Dynamiques d'exploitation et de valorisation des ressources halieutiques du PNDS*, (vi) the establishment of a Marine Protected Area in Bamboung through the *Préservation des ressources halieutiques par les communautés de pêcheurs* project, executed by the Océanium and funded by the french GEF, (vii) activities of the Conservation and Research of West African Aquatic Mammals (COREWAM), and (viii) the GTZ funded Promotion of Self-help Structures for Natural Resource Management in the Sine-Saloum.

The plan would address two major concerns: (i) reaching agreement with neighboring fishing communities on a set of measures to sustainably manage marine biodiversity within the Saloum Delta, including the reduction of by-catch of dolphins and sea turtles, the elimination of traditional hunting for manatees, strict protection of bird colonies during the breeding season, and sustainable harvesting of shellfish in tidal mudflats, (ii) the adoption of sustainable fishing practices throughout the Biosphere Reserve, based on an assessment of fish resources and a recognition of area-based rights, as proposed in Component 1. Of particular concern are approximately 500 km² of marine habitat within the PNDS where traditional artisanal fishermen are authorized to fish.

The ecosystem management plan would be completed within 12 months of project effectiveness, and the Government of Senegal would submit the proposal to UNESCO to expand the existing reserve within 24 months of project effectiveness. The joint submission for the transboundary Reserve would be done within 36 months after effectiveness.

Interim measures to be implemented during the first 12 months would include activities in the annual work plan of the PNDS and the Palmarin CNR, as well as activities previously funded by IUCN. These measure include the renewal of key equipment and the rehabilitation of infrastructure in the 2 existing protected areas, capacity building for local stakeholders, targeted technical assistance to help establish a Marine Protected Area in Bamboung, and awareness campaigns and participatory assessments of sea turtles, dolphins, manatees and sea birds.

2.1.4 Support to the National MAB Committee

The project would support the National MAB Committee to the extent required to ensure the establishment or redesign of Biosphere Reserves in the three pilot areas. Expenditures would include

the use of consultants to prepare nomination dossiers and the organization of meetings.

Sub-Component 2.2: Strengthening the Biodiversity Conservation Framework (US\$1.57 million)

The Sub-Component would support efforts of the Government of Senegal to update the framework for biological diversity, including a thorough revision of the legal framework, the institutional framework, and the governance mechanism, and the establishment of a mechanism to ensure long-term sustainability.

Activity 2.2.1: Biodiversity and Protected Area Act

The Project would support the preparation of a Biodiversity and Protected Area Act, setting national biodiversity management 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.

The DPN will supervise preparation of the Act. A competitively selected consultant will prepare a draft within 12 months after Project effectiveness. The consultant will identify all available options for the future institutional framework, and submit them for review to the national Biodiversity Committee. 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. Adoption of the Act is scheduled before the mid-term review.

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 Act. The exact nature of this support would be determined during the mid-term review and would most likely include capacity building, equipment, consultancies and small works. Prior to the adoption of the Act, the DPN would operate according to the institutional framework developed in 2003.

The Project would support the establishment of a *Cellule Opérationnelle de Mise en Oeuvre (COMO)* within the DPN to oversee the implementation of Component 2, including: (i) coordinating, monitoring and evaluating ecosystem management activities in the 3 pilot areas (Sub-Component 2.1), (ii) preparing the Biodiversity and Protected Area Act, (iii) monitoring the status of biodiversity nationwide, (iv) supporting the National Biodiversity Committee, and (v) conducting studies and consultation to establish a biodiversity trust fund.

Within the DPN, the COMO would oversee: (i) the full implementation of the 2003 institutional framework, (ii) strengthening of DPN's overall performance monitoring and evaluation framework, (iii) training of officers in participatory planning and in communication, (iv) technical training in biodiversity management techniques (focusing on coastal biodiversity), (v) organization of DPN's archives and documentation, and (vi) education, information, and communication activities, including awareness campaigns regarding marine and coastal biodiversity.

Overall performance monitoring and evaluation would focus on the performance of management and annual work plans for the protected areas (Biosphere Reserves, National Parks, Wildlife Reserves, Special Reserves, Marine Protected Areas and Community Nature Reserves) overseen by the DPN. It would cover all activities within the DPN work program.

Resources would include critical equipment, training and technical assistance, and operating expenses required by the COMO to oversee implementation of Component 2.

Activity 2.2.3: National Biodiversity Committee and Biodiversity Monitoring

The Project would support the National Biodiversity Committee (NBC) to monitor and evaluate the state of biodiversity in Senegal, to prepare a State of Biodiversity Report with annual updates, and to disclose the Report and updates 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 and by other stakeholders, such as the UNDP-funded PGIES. The NBC would identify knowledge gaps and recommend to DPN that it initiate targeted studies or coordinate monitoring programs. The Project would fund certain key studies, most particularly regarding sea turtles and dolphins, 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.

Government would establish a Secretariat for the National Biodiversity Committee within DPN, before January 1, 2005. The Project would support Secretariat, including: (i) management of a biodiversity information system, to manage the data and records resulting from the above-mentioned monitoring activities, (ii) preparation of draft biodiversity report and updates, which would be adopted by the NBC, and (iii) information, communication and education activities related to the Biodiversity Convention, including the development of a web site. A study funded under the PHRD grant will define the set of biodiversity indicators that would be regularly documented.

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 managed by the National Biodiversity Committee. The study would build upon the results of the ongoing Public Expenditure Review and Economic Analysis of Biodiversity, funded under the 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.

Project Component 3. Program Management, M&E, and Communication - US\$ 3.94 million

The purpose of this component is efficient management of the Project. Component costs include US\$660,000 for the PPF.

Sub-Component 3.1: Monitoring and Evaluation (US\$2.8 million)

The Project would fund the PCU to manage funds from donors and co-operating partners, and to ensure the efficient funding and procurement of activities implemented by the COMOs. The PCU would also implement a system to monitor overall implementation progress and achievements, and monitor Project performance and impact using a set of key performance indicators. Each COMO would monitor its activities and report to the PCU. The PCU would consolidate the information from implementing institutions and produce quarterly, six-monthly and annual reports.

The Project would also support independent evaluations of program impacts and beneficiary assessments by independent consultants at startup, midterm and completion.

Sub-Component 3.1: Coordination (US\$0.1 million)

The PCU would support the GIRMaC Steering Committee and the Advisory Scientific and Technical Committee, and help organize joint sessions with the CNCPM and the National Biodiversity Committee. It would also help organize Ecosystem Management Committees in each of the three pilot areas, to ensure coordination among the various implementing agencies in the field.

Sub-Component 3.3: Communication (US\$0.3 million)

The PCU would monitor the implementation of the GIRMaC Communication Plan, help coordinate the communication activities of the COMOs, and implement focused communication activities, including the maintenance of the Program's web site, publication of its bulletin, and awareness campaigns on Program activities and challenges.

Sub-Component 3.4: Sub-regional Coordination (US\$0.1 million)

The PCU would cooperate with sub-regional and international institutions involved in similar initiatives. Within 6 months after Project effectiveness, the PCU would draft a coordination plan between the GIRMaC and the GEF Senegal River Basin Project, and other GEF-funded projects as appropriate, which would spell out coordination activities.

Sub-Component 3.5 (US\$0.66 million)

Project preparation activities funded by the PPF.

Annex 3: Estimated Project Costs
SENEGAL: Integrated Marine and Coastal Resources Management Project

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
1. Management of sustainable fisheries	5.50	1.03	6.53
2. Conservation of critical habitats and species	5.00	1.02	6.02
3. Program management, M&E and communication	3.50	0.44	3.94
Total Baseline Cost	14.00	2.49	16.49
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.00	0.00	0.00
Total Project Costs¹	14.00	2.49	16.49
Total Financing Required	14.00	2.49	16.49

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Works	0.00	0.00	0.00
Goods	0.00	0.00	0.00
Consultants	0.00	0.00	0.00
Sub-projects	0.00	0.00	0.00
Total Project Costs¹	0.00	0.00	0.00
Total Financing Required	0.00	0.00	0.00

¹ Identifiable taxes and duties are 0 (US\$m) and the total project cost, net of taxes, is 11.49 (US\$m). Therefore, the project cost sharing ratio is 87.03% of total project cost net of taxes.

Annex 4: Summary Economic Analysis

SENEGAL: Integrated Marine and Coastal Resources Management Project

Very few data exist which to evaluate the extent of the benefits likely to be generated by the GIRMaC. This reflects the weakness of data collection in Senegal but also the difficulty of measuring and valuing many of the effects involved, especially the likely off-site benefits (positive externalities) of the three proposed biosphere reserves.

Because of these limitations, this annex presents a description of the likely costs and benefits of the project. A specific quantitative study based on the framework provided by this annex would be completed by the mid-term review of the project.

Costs

In addition to the costs of implementing the project, there would be also opportunity costs from forgoing use of project areas. Given the current imprecision of the areas concerned by the project, identified threats to ecosystems are used as proxy of foregoing use of resources in the biosphere reserves.

Project costs

The activities to be undertaken under the GIRMaC are described in detail in Annex 2. They include: (i) development of sustainable fisheries, (ii) conservation of critical habitats and species and (iii) program management. The projected financial costs of the project are \$16.49 million over five years (2005-2009). No recurrent costs after project completion (biosphere reserve and fisheries management current costs) have at present been calculated.

Opportunity costs

In the Saloum delta, mangroves services are threatened by local populations who collect shellfish, oysters, eggs and hunt sea turtles. As the mangroves are a critical nursery ground for many species, directly affecting the production of stock and indirectly affecting the presence of fish eating dolphins and birds. Project implementation would help enforce current prohibitions to hunt turtles or to cut down trees to harvest oysters. This should result in a short-term loss of income for some local populations. The amount of these losses depends on the exact intensity of harvesting in mangroves and on the interdiction and regulation enacted introduced by the biosphere reserve creation.

Some fishery activities currently occur in the network of protected areas and in the nursery ground of ecosystems that are not currently protected but that will be incorporated in the larger biosphere reserve area. The project should forbid or at least strictly regulate these activities in order to restore the stock of fish. Consequently, this should result in income losses for some fishermen. In addition, the local comanagement initiatives in 12 targeted artisanal fisheries introduced in the periphery of the biosphere area are likely to limit the number of fishermen and may be the volume of catch, especially during the stock recovery period that is likely to be as long as the project implementation. Again, this should result in another short term loss of income for fishermen communities. But, as fisheries are overexploited, the rent from fishery has already been dissipated. Consequently, the opportunity cost from fishery regulation should be very low.

If the project succeeds in halting ecosystems services degradation in the proposed biosphere reserve and putting in place LABMI in related artisanal fisheries, opportunity cost are like to be generated in the short term for the local communities. Although qualitative information is available on many threats, data are insufficient to quantify them. For this reason, the project also includes links to a social fund to compensate fishers for foregone fisheries income in the short-term, through the introduction of

alternative livelihoods.

Benefits

In the three project areas, the project will aim to empower coastal communities and fishers to sustainably manage the coastal demersal fisheries resources, through an area-based co-management system and strengthen the protection of coastal ecosystems. The success of both components is interdependent, and the benefits produced by these two components can't be treated separately. Then, the three main benefits of the project are: (i) increased fish and crustacean rent some years after the project implementation as consequence of stock recovery and LABMI implementation, (ii) increased recreational/ecotourism rent and (iii) better preservation of marine and bird diversity, both in the short term.

Biodiversity preservation benefits

The three proposed biosphere reserve support extensive marine and terrestrial biodiversity that is described in detail in annex 11. By protecting ecosystems in the three proposed biosphere reserves, the project would protect natural habitat important for fish and crustacean breeding and will indirectly protect mammals and birds that are attracted by fish resources. A proxy for the benefits of biodiversity conservation in three proposed biosphere reserves arising from the project are the likely additional payments made from the international donor community to the Senegalese network of protected area. Indeed, those direct payments for biodiversity conservation reflect the willingness to pay (WTP) of the international community and are linked to the existence of biodiversity in the three proposed biosphere reserves.

Ecotourism benefits

Protected areas are currently embedded in the three proposed biosphere reserves to be created or strengthened by the project. The presence of fishes in the deltas sustains important colonies of fish eating birds and dolphins that are the main attraction for ecotourism, especially the growing sector of bird-watching tourism. The proposed Senegalese river delta biosphere reserve includes 4 protected areas Parc national des oiseaux du Djoudj, réserve speciale de faune du Ndiaël, réserve spéciale de faune de Gueumbeul and parc national de la langue de Barbarie. covering 65,000 hectares and visited annually by around 10,000 bird watchers. The proposed Cap-Vert peninsula reserve includes 4 protected areas and one cultural site Parc national des îles de la Madeleine, réserve de Popenguine and réserves naturelles communautaires de la Somone et de Teuguène ; île de Gorée., covering 1,500 hectares. No data on bird-watcher and cultural tourism is available. The proposed Cap-Vert peninsula reserve includes 2 protected areas Parc national du delta du Saloum and réserve naturelle communautaire de Palmarin., covering 150,000 hectares and visited by around 1,000 eco-tourists each year. Ecotourism benefits of the project depend on the additional number of visitors that would made possible by the project over time (compared to the numbers of visitors that would come without the project) and on the economic rent Because nature tourism is based upon scarce natural resources, it generates economic rents. These rents will generally be proportional to the uniqueness of the tourism asset, being fairly low for sun-sand-and-sea destinations, therefore, but potentially very high for ecotourist destinations. from tourism captured by Senegal from the additional visitors. Rents can be captured in a variety of ways, including through park entrance fees, airport and visa fees, and hotel taxes.

Fish and crustacean production benefits

Reducing or halting pressures on marine and coastal ecosystems should allow the fish and crustacean stocks to recover as a consequence of better protection of nursery ground for juveniles. The indirect or off-site benefits of the biosphere reserve would then be, in the medium or long term, the increase of

catch per unit effort CPUE measures the fish harvested per unit of fishing effort. The more biologically and economically overexploited the fish and crustacean stock, the more effort a fisherman will have to capture a dwindling amount of fish. (CPUE) in the related artisanal fisheries. Moreover, in the artisanal fisheries targeted by the project where LABMI will be introduced, reducing fishermen number in the artisanal fisheries would also help increasing CPUE of the remaining units, which would in turn increase the artisanal fishery rent. Consequently, the fish and crustacean production benefits of the project are the rent of the fishery that would see their CPUE increasing in the with-project situation compared with the with-out project situation.

These benefits are likely to appear after fish and crustacean stocks have recovered, certainly after project completion. Indeed, international evidences suggest that only a few species are not resilient but that the effects of the creation of no-take zone are likely to materialize after some years, not immediately. One recent study has examined the various characteristics of 76 marine reserves where fishing had been prohibited, established between two and twenty years. Results are that on average, abundance of fish stocks (measured in density) approximately doubled, biomass increased to 2.5 times the biomass of nearby fished areas, average fish body size increased by approximately one third, and the number of species present per sample increased by one third. In addition, scientific evidence suggests that this increase in fish stocks in closed areas 'spills over' into nearby fishing grounds, directly replenishing and rejuvenating these areas and contributing to an increase in fisheries CPUE.

Conclusions

If the project succeeds in halting degradation of ecosystems services within the three proposed biosphere reserves, it is rather likely that benefits will be generated, both on site and, especially off site. In the biosphere areas themselves, outstanding ecosystems would be protected and their potential for attracting tourism preserved. Outside the proposed biosphere reserves, the management of coastal demersal fisheries and the voluntary closure of critical fish breeding grounds and nursery areas by communities and fishers is expected to stabilize coastal demersal fish CPUE (which are currently declining) and ultimately lead to their increase. The Fisheries Sector Strategy further estimates that the introduction of effective management for the coastal demersal fish stocks, as the project aims to do in the three project areas, would increase the value added for the small-scale coastal demersal fisheries by over 30 percent from the 2002 totals, and the total value added per small-scale fishing vessel would increase by as much as 300 percent.

However, at that stage, data are insufficient to say that the economic benefits (additional WTP for biodiversity conservation, additional tourism rent and fishery rent) generated by the project are sufficient to justify the investments involved plus the opportunity cost, even if it is likely. Further effort is needed during project implementation to collect data and to monitor the impact of the project especially the likely short term opportunity cost for local population, the biophysical relationship between better protection of nursery ground and stock recovery and the amount of rent generated by the well regulated artisanal fisheries

Monitoring the impact of the project is particularly vital in such case, in which the weakness of available data limits the ability to make *ex-ante* estimates of benefits.

In the long term, the number of tourists visiting the parks embedded in the three and the fees they pay or are willing to pay would provide direct estimates of some of the economic benefits being obtained. The forthcoming public expenditure on the environment (PEER) in Senegal could be a starting point to collect valuable information on the ecotourism rent in Senegal as well as the existing tourism sector study (ARWPS No 46). In addition, a contingent valuation on the tourist willingness to pay for visiting the protected area, if any improvement in the ecosystems services, could be a valuable tool.

The project is aiming to arrest and if possible reverse decrease in capture and decrease in the catch per unit effort (CPUE) in the area next to the biosphere reserve and where LABMI will be implemented. As said earlier, there is currently limited understanding of the biophysical relationship between better protection of nursery ground and stock recovery. There is also limited understanding on the possible effects on introducing property rights in areas where common resources management was the rule, especially the additional effect on increasing the CPUE on the remaining fishers. In that context, it is crucial to put in place data collection and methodology to quantify expected outcomes of both stock recovery (but there will certainly be limited results during project implementation) and LABMI implementation.

Annex 5: Financial Summary
SENEGAL: Integrated Marine and Coastal Resources Management Project
Years Ending

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	4422984.0	2225851.0	2288554.0	1305122.0	1262009.0	0.0	0.0
Recurrent Costs	1129486.0	886423.0	955297.0	986524.0	1034082.0	0.0	0.0
Total Project Costs	5552470.0	3112274.0	3243851.0	2291646.0	2296091.0	0.0	0.0
Total Financing	5552470.0	3112274.0	3243851.0	2291646.0	2296091.0	0.0	0.0
Financing							
IBRD/IDA	3096591.0	1643855.0	2162535.0	1549202.0	1547817.0	0.0	0.0
Government	542785.0	301542.0	261524.0	194238.0	196243.0	0.0	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User Fees/Beneficiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GEF	1913094.0	1166876.0	819792.0	548207.0	552031.0	0.0	0.0
Total Project Financing	5552470.0	3112273.0	3243851.0	2291647.0	2296091.0	0.0	0.0

Main assumptions:

Annex 6(A): Procurement Arrangements
SENEGAL: Integrated Marine and Coastal Resources Management Project

Procurement

1. General

The Project Coordination Unit (PCU) would include a Procurement Specialist trained in the Bank's procurement rules in the Project Coordination Unit who will be responsible for all the procurement activities of the Project.

Procurement for the proposed project would be carried out in accordance with the provisions of the World Bank "Guidelines: Procurement Under IBRD Loans and IDA Credits" dated May 2004; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, and the provisions stipulated in the Legal Agreements. The general description of various items to be procured under different expenditure category are provided below. The Borrower prepared a Procurement Plan that was discussed during appraisal. The plan indicates different procurement or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team. It will be finalized prior to negotiations. The Procurement Plan will be updated annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

1.1 Procurement of Works

Works procured under the project would include minor works on construction or rehabilitation of offices and parks. The procurement will be done using the Bank's Standard Bidding Documents (SBD) for all ICB and National SBD agreed with the Bank (Standard bid document for the AGETIPs is recommended).

1.2 Procurement of Goods

Goods procured under this project would include:

- Vehicles and office equipment
- Office furniture
- Fishery equipment
- Communication systems and equipment

The procurement would be done using the Bank's SBD for all ICB and National SBD agreed with the Bank (Standard bid document and request for quotation used by AGETIPs is recommended).

1.3 Procurement of Non-consulting services

Service for insurance for the staff is at this moment the only non-consulting services to be procured under the project; a system of quotation will be used to contract with the insurance.

1.4 Selection of Consultants

Consultant Services to be contracted and financed under the credit are:

1. Development of management plans for key institutions and protected areas
2. Development of monitoring/evaluation systems
3. Development of a program for capacity building

Short lists of consultants for services estimated to cost less than US\$100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

1.5 Operating Costs

This category includes items such as office supplies, utilities bills, audit of the project, fuel, maintenance of office equipment, maintenance of vehicles, travel, document preparation and printing, and similar items that important for the good functioning of the project.

2. Assessment of the agency's capacity to implement procurement

Technical specifications and ToRs would be prepared and finalized by operational implementation cells in each of the implementing agencies (*COMO-Pêche* for Component 1, and *COMO-Écosystème* for Component 2), and would be included in the procurement plans. The procurement activities would be carried out by the Procurement Specialist in the PCU.

Bourama Diaite, Senior Procurement Specialist at the Dakar World Bank Office, carried out on April 2, 2004 an assessment of the capacity of the implementing agencies (DPM and DPN) to implement procurement actions for the Project. The assessment reviewed the organizational structure for implementing the project and the interaction between the project staff responsible for procurement and the implementation cells in the implementing agencies.

The assessment concluded that the overall Project risk for procurement is **medium**. The assessment showed that the Procurement Specialist in the PCU is knowledgeable and familiar with World Bank procedures. Nonetheless, the following measures were identified to further strengthen Project procurement capacity:

- The Procurement Specialist should receive specialized procurement training, to better monitor the progress of procurement activities and speed up the process of contract signature.
- To avoid delays in the procurement process, the operational implementation cells should finalize the technical specifications for the procurement of goods and works and the terms of reference for the selection of consultants in a timely manner.
- The procurement specialist should limit his intervention in the procurement activities to: (i) centralization of procurement activities in one procurement plan to ensure that the thresholds are respected in terms of methods (possibility of grouping expenditures and aggregates, (ii) preparation of the bidding documents and requests for proposals; and (iii) advising the implementation cell concerned during the evaluation of bids.

The assessment also identified risks associated with Project procurement during implementation:

- Lack of direct oversight responsibility of the Procurement Specialist over staff in implementation cells regarding procurement matters;
- Late submission of technical specifications and terms of reference from implementing agencies might delay procurement;
- Insufficient procurement planning.

To minimize these risks, the following measures were identified and agreed upon:

- Clear Terms of reference of the procurement specialist role and responsibility of the quality of the procurement documents and the delays of the process (contract signature);

- Define and update regularly the procurement plan and follow it adequately, to quickly identify the bottlenecks and solve the problems;
- Better coordination of the project on procurement issues to avoid delaying procurement decisions and submission of technical specifications and terms of reference.

3. Procurement Plan

The Borrower developed during appraisal a Procurement Plan for project implementation that provides the basis for determining procurement methods. Agreement on this plan was reached between the Borrower and the Project Team on May 10, 2004 and is available at the PCU. It will also be available in the Project's database and in the Bank's external website. The Procurement Plan will be updated annually or as frequently as required to reflect the actual project implementation needs and improvements in institutional capacity.

4. Frequency of Procurement Supervision

In addition to the prior review supervisions to be carried out by Bank staff, it is also recommended for procurement supervision missions to visit the field to carry out at least three post review missions of procurement actions during each of the first two years of the project and two missions per year thereafter.

Attachment 1: Details of the procurement arrangement involving international competition

1. Goods and Works and Non-consulting Services

- (a) List of contract packages that would be procured following ICB and direct contracting:

<i>Ref. No.</i>	<i>Contract (Description)</i>	<i>Estimated Cost</i>	<i>Procurement Method</i>	<i>P-Q</i>	<i>Domestic Preference</i>	<i>Bank Review</i>	<i>Expected Bid Opening Date</i>
MF01/A1	Vehicles	392724	AOI		NO	Prior	12/11/ 2004

- (b) ICB Contracts estimated to cost above the equivalent value of US\$500,000 for works and US\$150,000 for goods per contract, and all direct contracting would be subjected to prior review by the Bank.

2. Consulting Services

- (a) List of Consulting Assignments with a short-list of international firms:

<i>Ref. No.</i>	<i>Description of Assignment</i>	<i>Estimated Cost</i>	<i>Selection Method</i>	<i>Review by Bank</i>	<i>Submission Date of Proposals</i>
1	<i>Sélection d'un consultant pour l'évaluation de base et cartographie détaillée des ressources marines et côtières de la RBDS + RNCP+AMP Bamboung, Delta du Fleuve Sénégal et Presqu'île du Cap-Vert</i>	450 000	SBQC	Prior	08/10/2004

2	<i>Sélection d'un consultant pour l'évaluation environnementale des impacts de la réhabilitation des fonctions écologiques du delta du Sénégal</i>	150 000	SBQC	Prior	08/08/2005
3	<i>Sélection d'un consultant pour la mission d'assistance technique pour l'appui à l'amélioration de l'aménagement des pêcheries (sous-composante 1.1)</i>	162 000	Individu	Prior	30/09/2004
4	<i>Sélection d'un consultant pour la mission d'assistance technique pour l'identification des sites pilotes de cogestion locale (sous-composante 1.2)</i>	238 235	Individu	Prior	30/09/2004

- (b) Consultancy services estimated to cost above the equivalent value of US\$100,000 for firms and US\$50,000 for individuals per contract and Single Source Selection of consultants would be subjected to prior review by the Bank.
- (c) **Short lists composed entirely of national consultants.** Short lists of consultants for services estimated to cost less than the equivalent value of US\$150,000 per contract, may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Procurement methods (Table A)

Table A1: Consultant Selection Arrangements (optional)
(US\$ million equivalent)

Consultant Services Expenditure Category	Selection Method							Total Cost ¹
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
A. Firms	1.72 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.72 (0.00)
B. Individuals	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.33 (0.00)	0.71 (0.00)	0.00 (0.00)	1.04 (0.00)
Total	1.72 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.33 (0.00)	0.71 (0.00)	0.00 (0.00)	2.76 (0.00)

¹⁾ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection

QBS = Quality-based Selection

SFB = Selection under a Fixed Budget

LCS = Least-Cost Selection

CQ = Selection Based on Consultants' Qualifications

Other = Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parentheses are the amounts to be financed by the Bank Credit/Other (Specify).

**Annex 6(B): Financial Management and Disbursement Arrangements
SENEGAL: Integrated Marine and Coastal Resources Management Project**

Financial Management

1. Summary of the Financial Management Assessment

The Bank conducted an assessment to determine whether there financial management arrangements for the project met Bank requirements, including entities' system of accounting, reporting, auditing and internal controls for the implementing entity (the Project Coordination Unit).

The mission noted that currently there is financial management arrangements built thanks to the Project Preparation Fund (PPF) and the Trust Fund (TF). However, further work is required to address issues relating to:

- Staffing,
- Administrative, Accounting and financial manual,
- Accounting software,
- External audit.

The following action plan summarizes the steps that were completed prior to negotiations:

Action	Tasks	Entity	Target Completion Date
1. Development of the project's manual of procedures (i)	<ul style="list-style-type: none"> ▪ ToR for the consultant ▪ Selection process ▪ Draft manual ▪ Review of the draft manual ▪ Final version 	<ul style="list-style-type: none"> ● PCU ● PCU ● Consultant ● PCU / IDA ● PCU / Consultant 	To be completed before negotiation
2. Update of the financial management system (i)	<ul style="list-style-type: none"> ● Development of a chart of accounts reflecting the activities/ sources of financing of the project (regional and central level), ● Customizing the agreed format for the quarterly Financial Monitoring Reports (FMR) ● Completing the testing of the transactions recording and the financial statement production and printing 	<ul style="list-style-type: none"> ● PCU ● PCU ● PCU 	To be completed before negotiation
4. Selection of an auditor (i)	Update the contract of the auditor of the PPF and the TF to include the audit of the Credit	PCU	To be completed before negotiation

The main findings of the capacity assessment are as follows:

1.1 Staffing and Implementation Arrangements

1.1.1 Implementation Arrangements (fiduciary arrangements)

The Project Coordination Unit (PCU) will provide efficient financial management, reporting and administration for project components.

1.1.2 Scope of the Assessment

By looking at the implementation arrangements of the project, there will be basically only one major

circuit for the flows of funds, going from the PCU to the suppliers. According to general financing mechanism in Senegal, the director DDI (Direction de la Dette et de l'Investissement) under the Ministry of Economy and Finance will be managing the special account of the project. However, all the supporting documentation justifying the use of funds will be prepared and kept by the PCU.

1.1.3 Staffing

The PCU has, as far as financial management is concerned, the responsibility to collect and control invoices, manage the project's bank accounts, make payments, keep the books of accounts and prepare the financial reports. The financial management assessment aimed at identifying whether the PCU has the capacity to handle all of these tasks and if not what are the weaknesses and strengthening measures to be implemented.

Overall, the PCU has satisfactory financial management capacity. The finance and accounting staff, consisting of one person (the Responsable Administratif et Financier: RAF), is already in place. He has good academic background as well as professional experience, including project financial management. He was recruited under the Trust Fund through a competitive process.

He will mainly be responsible for the general financial management of the project. He will work closely with the representatives of DDI and the accountant in DPM (Direction des Pêches Maritimes) and an accountant in DPN (Direction des Parcs Nationaux).

1.2 Accounting Policies and Procedures

There will be also a need to elaborate a manual of administrative, accounting, and financial procedures before effectiveness. This manual must include accounting policies and procedures, definition of respective duties with a good segregation, budgeting system and all relevant administrative and financial procedures, relation between the components of the project, reporting mechanisms at each level. All the staff and the stakeholders involved in the project must be trained in those procedures.

1.3 Reporting and Monitoring

The PCU will prepare quarterly Financial Management Reports (FMR). The format of the FMR will be discussed and agreed before effectiveness. The quarterly reports will cover financial management, procurement, and physical progress monitoring, covering all activities financed under the project regardless the source of funding. No major problem is expected with the financial and procurement reports. Areas of concern are with the physical progress monitoring report where the PCU lacks experience and which would require additional efforts. Those physical progress reports will be based on the outcomes indicators included in the DCA.

1.4 Financial Management Information System

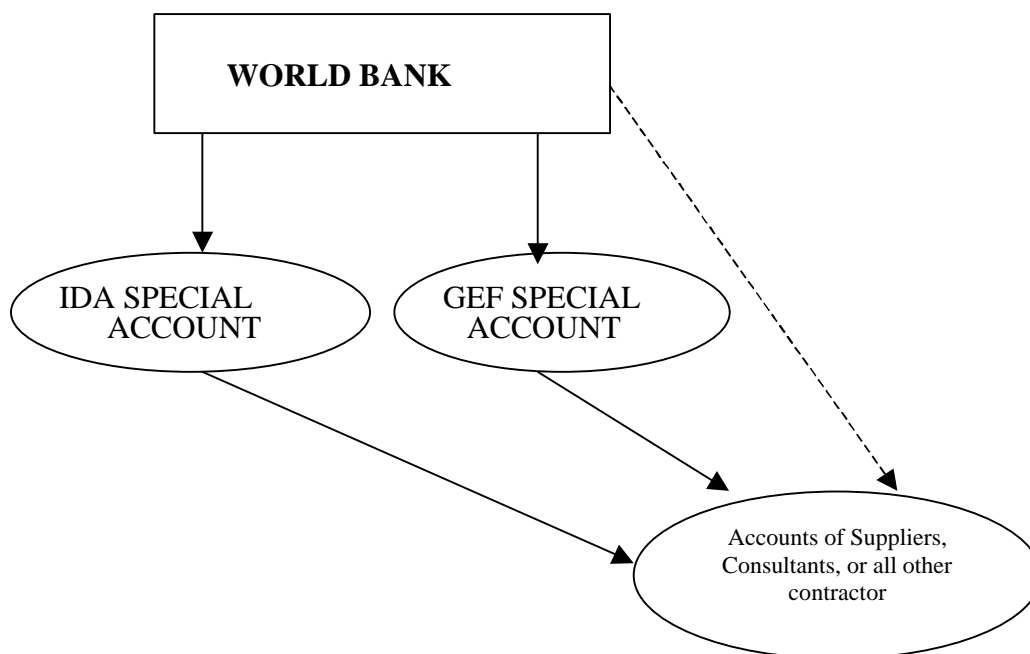
A computerized financial management system is already installed in the PCU. There will only be a need to update the software for the credit and customize the chart of accounts and the format of the reports prior to negotiations.

1.5 Flow of funds

The management of the Special Accounts in Senegal is under the responsibility of the director of DDI.

There will be two Special Accounts: one for IDA and another one for GEF.

The following figure illustrates the flow of funds:



NOTES:

- The Special Accounts (SAs) will be located at DDI and the director of DDI will be the only authorized signatory of those SAs.

1.6 Summary of Country Financial Management Issues

The Country Financial Accountability Assessment (CFAA) of Senegal was conducted in FY 03. This mission identified the main areas of improvement of public financial management in Senegal. The action plan elaborated by the Government after this mission was adopted at the highest level of the Government during a meeting chaired by the Prime Minister.

The concerns in public financial management highlighted in the CFAA will not impact this project because of the specific arrangements for the flow of funds.

1.7 Impact of Procurement Arrangements

At the time of the financial management capacity assessment, the procurement assessment was under preparation. It was not therefore possible to assess the impact of procurement assessment findings on the project’s financial management. However the primary conclusion discussed with the procurement specialists do not anticipate any major impact on the financial management of the project.

2. Audit Arrangements

The project’s accounts will be subject to annual external audit by an auditing firm acceptable to IDA. An auditor has already been selected for the trust fund and the PPF. During the appraisal mission, the Bank reviewed the performance of the auditor and recommended that he be retained for the Credit. In the Development Credit Agreement (DCA) and the Grant Agreement (GA) it will also be clearly

mentioned that the annual audit reports will be submitted to IDA within six months of the end of each fiscal year (i.e., by June 30th).

3. Disbursement Arrangements

Traditional disbursements and withdrawal procedures (i.e. Direct Payment, Reimbursement, Replenishment and Special Commitment) will be in accordance with guidelines set out in the Disbursement Handbook during the first 18 months following project effectiveness. All replenishment applications will be submitted on a monthly basis. All replenishment or reimbursement applications will be fully documented except for contracts under the prior review threshold. SOE documentation will be retained at the Project Coordination Unit for review by Bank staff and annual audits.

Financial Management Reporting-based disbursement (FMR). The lack of previous financial management reporting experience from the PCU does not favor immediate application of the FMR-based disbursement method. Nevertheless, quarterly FMRs, including financial, procurement and physical progress, will be prepared as soon as the project is effective. During an interim period of 18 months, these FMR will be reviewed and the financial management capacity strengthened. At the end of the 18 months an assessment of the financial system will be done to evaluate the capability to switch to FMR disbursements. In the meantime, the project will follow traditional disbursements methods.

Allocation of credit/other (specify) proceeds (Table C)

Table C: Allocation of Credit/Other (Specify) Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
Civil Works	0.23	100% of foreign expenditures, 90% of local expenditures
Equipment	0.30	100% of foreign expenditures, 90% of local expenditures
Consultants	4.00	100% of foreign expenditures, 90% of local expenditures
Sub-projects	1.88	100% of amounts disbursed
Training	0.80	100%
Operating Costs	1.19	90%
PPF	0.60	none
Unallocated	1.00	none
Total Project Costs with Bank Financing	10.00	
Total	10.00	

Allocation of grant proceeds (Table C2)

Table C2: Allocation of GEF Grant Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
Civil Works	0.21	100% of foreign expenditures, 90% of local expenditures

Equipment	0.59	100% of foreign expenditures, 90% of local expenditures
Consultants	1.59	100% of foreign expenditures, 90% of local expenditures
Sub-projects	1.11	100% of amounts disbursed
Training	0.17	100%
Operating Costs	0.83	90%
PPF	0.00	none
Unallocated	0.50	none
Total Project Costs with Bank Financing		
Total	5.00	

Use of statements of expenditures (SOEs):

Disbursements based on Statements of Expenditures (SOEs) will be used for: (i) works for contracts with a value less than US\$500,000, (ii) goods for contracts with a value less than US\$150,000, (iii) consulting firms for contracts less than US\$100,000, (iv) individual consultants for contracts less than US\$50,000, (v) training, (vi) sub-projects and (vii) operating costs. All supporting documentation for SOEs will be retained at the Project Coordination Unit and will be readily accessible for review by periodic Bank supervision missions and external auditors.

In the case of the funds for grants to be made to communities, there will be pre-financing of expenditures, as communities are unlikely to start contracting without the assurance of funds. All disbursements against expenditures will be subject to *ex post* financial and physical audits, on a sample basis, to be carried out by auditors employed by the project.

Special account:

To facilitate the project implementation and reduce the volume of withdrawal applications, the Project Coordination Unit on behalf of the Government, will open two Special Accounts (SA) in FCFA in a commercial bank on terms and conditions acceptable to IDA. The first Special Account (SA-A) will be used exclusively to finance all expenditures under the IDA Credit, and the second Special Account (SA-B) will be used to finance all expenditures under the GEF Grant. The authorized allocation for SA-A will be US\$1 million equivalent in FCFA and will cover about four months of eligible expenditures. The authorized allocation for SA-B will be US\$500,000 equivalent in FCFA and will cover about four months of eligible expenditures. Upon credit effectiveness, IDA will deposit the amount of FCFA equivalent to US\$1 million in SA-A, representing the total allocation for that account, and FCFA equivalent to US\$500,000 in SA-B also representing the total allocation for that account.

The Special Accounts will be used for all payments in an amount below 20% of the initial deposit to the Special Accounts. These accounts managed by the director of DDI. Moreover, for small and numerous local currency expenditures, the borrower may draw an amount from the special account sufficient to meet eligible expenditures but only for a period of less than 30 days.

Annex 7: Project Processing Schedule
SENEGAL: Integrated Marine and Coastal Resources Management Project

Project Schedule	Planned	Actual
Time taken to prepare the project (months)		
First Bank mission (identification)		
Appraisal mission departure		04/16/2004 04/28/2004
Negotiations		
Planned Date of Effectiveness		

Prepared by:

Project preparation was coordinated by the Project Coordination Unit (PCU), under the supervision of the Ministry of Environment and Nature Protection. The Project was prepared in partnership with the Department of Maritime Fisheries and the Department of National Parks.

Preparation assistance:

Preparation assistance included: (i) a PDF B of US\$343,496, (ii) a Japan PHRD Grant (TF053114) for US\$522,000, and (iii) a PPF of US\$600,000.

Bank staff who worked on the project included:

Name	Speciality
Yves Prévost	Task Team Leader
Christophe Crépin	GEF
Adama Touré	Monitoring and Evaluation
Nina Doetinchem	GEF, Biodiversity
Jean-Christophe Carret	Economic Analysis
Bourama Diaite	Procurement
Fily Sissoko	Financial Management
Kristine Ivarsdotter	Social Safeguards
Gordon Appleby	Social Safeguards
Solange Alliali	Counsel
Agnès Albert-Loth	Disbursement
Robert Robelus	Environmental safeguards
Caroline Guazzo	Support
Marie-Jeanne Ndiaye	Support
Sossena Tassew	Support
John Virdin	Peer Review
Cornelis de Hann	Peer Review
Tom Walton	Peer Review
Gert van Santen	Consultant, Fisheries

Annex 8: Documents in the Project File*
SENEGAL: Integrated Marine and Coastal Resources Management Project

A. Project Implementation Plan

The following documents are part of the Project Implementation Manual prepared by the recipient:

- Project Implementation Plan;
- Manual of Financial and Accounting Procedures;
- Detailed Procurement Plan for the first 18 months;
- Communication Plan;
- Monitoring and Evaluation Manual.

B. Bank Staff Assessments

C. Other

Other studies were funded during Project preparation:

Under the PDF B Grant

- Environmental and Social Assessment;
- Community participation in coastal and marine resource management;
- Baseline coastal and marine biodiversity study.

Under a PHRD grant:

- Diagnostic of fisheries sector;
- Environmental audit of the Somone watershed;
- Stakeholder assessment of the Keur Cupaam (Popenguine) Natural Community Reserve.

*Including electronic files

Annex 9: Statement of Loans and Credits

SENEGAL: Integrated Marine and Coastal Resources Management Project

30-Mar-2004

Project ID	FY	Purpose	Original Amount in US\$ Millions			Cancel.	Undisb.	Difference between expected and actual disbursements ^a	
			IBRD	IDA	GEF			Orig	Frm Rev'd
P080013	2004	Private Sector Adjustment Credit	0.00	45.00	0.00	0.00	44.52	0.00	0.00
P051609	2003	Private Investment Promotion Project	0.00	46.00	0.00	0.00	47.53	-2.01	0.00
P070541	2002	Nut. Enhancement Prog.	0.00	14.70	0.00	0.00	11.74	4.94	0.00
P074059	2002	HIV/AIDS Prevent. & Control	0.00	30.00	0.00	0.00	31.90	7.60	0.00
P041528	2001	LONG TERM WATER SECTOR PROJECT	0.00	125.00	0.00	0.00	130.46	39.89	0.00
P041566	2001	Social Dev. Fund	0.00	30.00	0.00	0.00	24.88	18.84	0.00
P047319	2000	Quality Educ. for All	0.00	50.00	0.00	0.00	18.80	-32.40	0.00
P069198	2000	AFTKL: SN Distance Learning Center - LIL	0.00	2.10	0.00	0.00	0.24	0.16	0.00
P055472	2000	URBAN MOBILITY IMPROVEMENT PROGRAM	0.00	70.00	0.00	0.00	74.56	60.90	0.00
P057996	2000	SN NATIONAL RURAL INFRAS	0.00	28.50	0.00	0.00	18.56	17.35	-0.52
P067498	2000	PUBLIC SERV. INFO-SYSTEMS MODERNIZATI	0.00	10.15	0.00	0.00	1.65	1.33	1.33
P002367	1999	Senegal:AGR.SRCVES&PROD.ORGs	0.00	27.40	0.00	0.00	11.19	9.99	2.55
P002366	1999	SN TRANSPORT II	0.00	90.00	0.00	0.00	71.17	49.53	0.00
P002365	1998	URB DEVT & DECEN PRO	0.00	75.00	0.00	0.00	12.57	11.18	7.18
P002369	1998	Integr. Health Sect. Dev.	0.00	50.00	0.00	0.00	19.22	19.11	0.00
P051610	1998	Senegal:AG.EXPORT PROMOTION	0.00	8.00	0.00	0.00	1.77	1.49	0.10
P042056	1997	SN SUST PART ENGY MGMT	0.00	0.00	4.70	0.00	0.51	0.42	0.31
P041567	1997	Endemic Disease	0.00	14.90	0.00	0.00	7.39	7.00	2.86
P046768	1997	SN SUST.PART.ENGY.MGMT.	0.00	5.20	4.70	0.00	0.69	0.70	0.60
P002346	1995	WATER SECTOR	0.00	100.00	0.00	0.00	6.14	19.85	13.18
Total:			0.00	821.95	9.40	0.00	535.48	235.87	27.57

SENEGAL
 STATEMENT OF IFC's
 Held and Disbursed Portfolio
 Feb 29 - 2004
 In Millions US Dollars

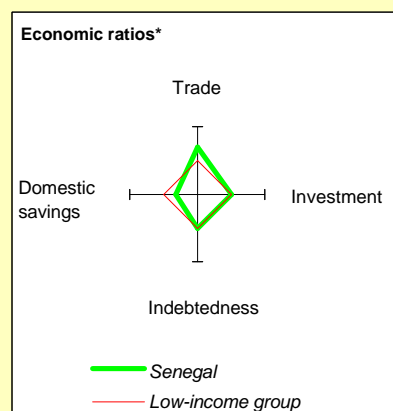
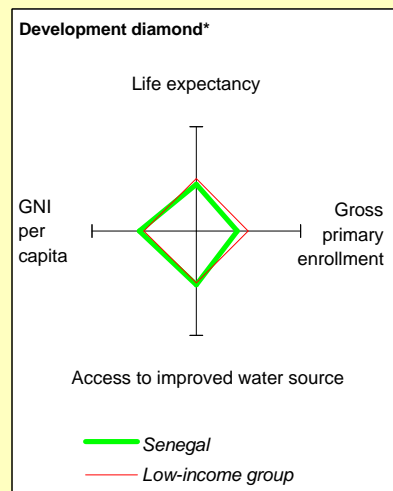
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1996/97	AEF SERT	0.00	0.04	0.00	0.00	0.00	0.04	0.00	0.00
1980	BHS	0.00	0.46	0.00	0.00	0.00	0.46	0.00	0.00
1999	Ciments du Sahel	16.44	2.26	3.10	0.00	16.44	2.26	3.10	0.00
1997/98	GTI Dakar	2.10	0.00	0.00	0.00	2.07	0.00	0.00	0.00
1998	SEF Fanaicha	0.38	0.00	0.00	0.00	0.38	0.00	0.00	0.00
2001	SEF Royal Saly	1.41	0.00	0.00	0.00	1.41	0.00	0.00	0.00
	Total Portfolio:	20.33	2.76	3.10	0.00	20.30	2.76	3.10	0.00

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
	Total Pending Commitment:	0.00	0.00	0.00	0.00

Annex 10: Country at a Glance

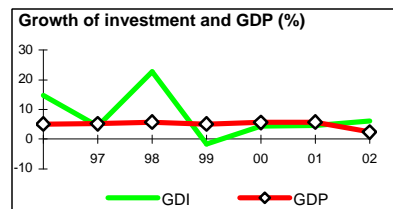
SENEGAL: Integrated Marine and Coastal Resources Management Project

POVERTY and SOCIAL	Senegal	Sub-Saharan Africa	Low-income		
2002					
Population, mid-year (millions)	10.0	688	2,495		
GNI per capita (Atlas method, US\$)	470	450	430		
GNI (Atlas method, US\$ billions)	4.7	306	1,072		
Average annual growth, 1996-02					
Population (%)	2.7	2.4	1.9		
Labor force (%)	2.7	2.5	2.3		
Most recent estimate (latest year available, 1996-02)					
Poverty (% of population below national poverty line)		
Urban population (% of total population)	49	33	30		
Life expectancy at birth (years)	52	46	59		
Infant mortality (per 1,000 live births)	73	105	81		
Child malnutrition (% of children under 5)	18		
Access to an improved water source (% of population)	78	58	76		
Illiteracy (% of population age 15+)	61	37	37		
Gross primary enrollment (% of school-age population)	75	86	95		
Male	79	92	103		
Female	70	80	87		
KEY ECONOMIC RATIOS and LONG-TERM TRENDS					
	1982	1992	2001	2002	
GDP (US\$ billions)	2.6	6.0	4.6	4.9	
Gross domestic investment/GDP	12.2	14.8	20.1	20.8	
Exports of goods and services/GDP	33.0	23.3	29.7	29.3	
Gross domestic savings/GDP	-2.5	7.4	12.0	13.0	
Gross national savings/GDP	-6.6	5.8	14.2	15.6	
Current account balance/GDP	-10.3	-6.7	-6.4	..	
Interest payments/GDP	1.5	0.8	1.2	1.3	
Total debt/GDP	72.1	60.8	75.1	79.3	
Total debt service/exports	12.7	13.0	12.6	14.3	
Present value of debt/GDP	51.9	..	
Present value of debt/exports	147.9	..	
	1982-92	1992-02	2001	2002	2002-06
<i>(average annual growth)</i>					
GDP	2.3	4.7	5.7	2.4	4.8
GDP per capita	-0.5	1.9	3.2	0.0	2.7

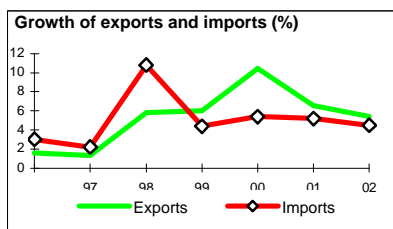


STRUCTURE of the ECONOMY

	1982	1992	2001	2002
<i>(% of GDP)</i>				
Agriculture	21.7	18.9	17.9	18.2
Industry	15.0	18.8	27.0	28.1
Manufacturing	10.4	12.5	17.7	18.2
Services	63.3	62.2	55.1	53.7
Private consumption	84.3	77.2	77.9	77.0
General government consumption	18.2	15.4	10.1	10.1
Imports of goods and services	47.7	30.7	37.7	37.1



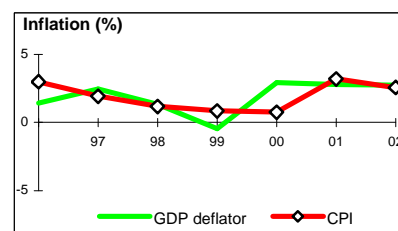
	1982-92	1992-02	2001	2002
<i>(average annual growth)</i>				
Agriculture	1.4	3.5	6.9	6.9
Industry	3.4	6.1	6.8	6.4
Manufacturing	3.6	5.0	4.7	4.7
Services	2.2	4.8	5.0	3.8
Private consumption	1.7	4.7	6.0	4.8
General government consumption	2.4	0.8	1.9	2.5
Gross domestic investment	4.5	6.0	4.7	6.2
Imports of goods and services	1.3	3.7	5.2	4.5



* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

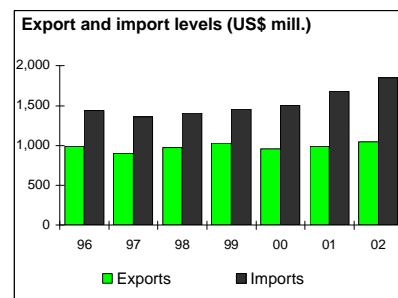
PRICES and GOVERNMENT FINANCE

	1982	1992	2001	2002
Domestic prices				
<i>(% change)</i>				
Consumer prices	17.3	0.0	3.0	2.4
Implicit GDP deflator	9.3	0.6	2.6	2.6
Government finance				
<i>(% of GDP, includes current grants)</i>				
Current revenue	17.9	18.9	18.1	19.6
Current budget balance	-3.5	2.6	2.0	6.6
Overall surplus/deficit	-7.2	-2.6	-5.9	-2.1



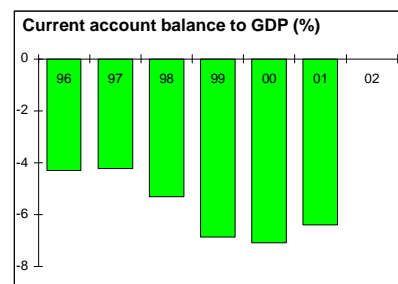
TRADE

	1982	1992	2001	2002
<i>(US\$ millions)</i>				
Total exports (fob)	502	828	992	1,046
Groundnut products	128	66	112	147
Phosphates	56	60	35	37
Manufactures	182	190	250	250
Total imports (cif)	984	1,355	1,678	1,847
Food	235	363	359	409
Fuel and energy	292	150	283	278
Capital goods	137	175	283	313
Export price index (1995=100)	91	93	79	81
Import price index (1995=100)	80	89	93	97
Terms of trade (1995=100)	113	104	85	84



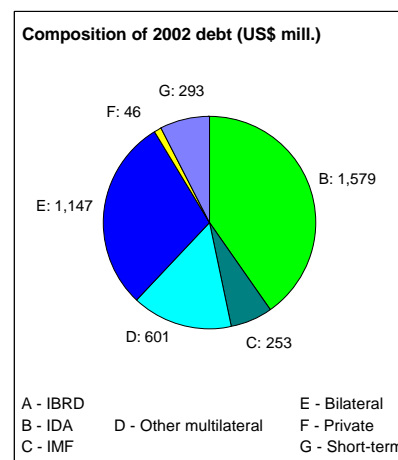
BALANCE of PAYMENTS

	1982	1992	2001	2002
<i>(US\$ millions)</i>				
Exports of goods and services	892	1,404	1,375	1,448
Imports of goods and services	1,277	1,851	1,747	1,833
Resource balance	-385	-447	-372	-385
Net income	-116	-133	-79	-73
Net current transfers	10	34	181	205
Current account balance	-266	-401	-297	..
Financing items (net)	140	422	352	..
Changes in net reserves	126	-20	-55	-47
Memo:				
Reserves including gold (US\$ millions)	25	22	596	630
Conversion rate (DEC, local/US\$)	328.6	264.7	729.0	718.6



EXTERNAL DEBT and RESOURCE FLOWS

	1982	1992	2001	2002
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	1,861	3,666	3,482	3,919
IBRD	79	62	0	0
IDA	166	873	1,384	1,579
Total debt service	123	210	206	218
IBRD	8	17	1	0
IDA	2	9	19	16
Composition of net resource flows				
Official grants	71	331	148	..
Official creditors	263	255	83	117
Private creditors	7	-31	41	1
Foreign direct investment	28	21	126	..
Portfolio equity	0	0	0	..
World Bank program				
Commitments	19	44	155	45
Disbursements	26	103	119	114
Principal repayments	3	14	11	6
Net flows	23	89	108	108
Interest payments	7	12	10	10
Net transfers	16	76	99	98



Note: This table was produced from the Development Economics central database.

8/20/03

Additional GEF Annex 11: Description of Project Sites

SENEGAL: Integrated Marine and Coastal Resources Management Project

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

- Senegal River Delta
- Cap-Vert Peninsula
- Saloum River Delta

The pilot areas were selected on the basis of the following criteria:

- they constitute ecosystems critical for Senegal's fisheries, including endemic or threatened species;
- they are inhabited by fishing communities with strong cultural identity and a commitment to the sustainable management of marine and coastal resources (as expressed during preparatory workshops);
- they include existing marine protected areas.

1. Senegal River Delta

Description

The Senegal River delta pilot area 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 Ocean-front 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 savanna. 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 implementation 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 pilot area

The long-term objective is for the pilot area 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 area 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* sp.

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 *Egretta* sp., 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 Flathead 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 savanna 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 gestion intégrée des écosystèmes au Sénégal* (PGIES).

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 palarctic 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 area 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-Côte) 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 Madeleine 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 peninsulas 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 pilot area

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 Tropicbirds, *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: The village of 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 began 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 8m 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 (Djifèr 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 pilot area

Most of the proposed pilot area 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 Niimi 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. harrissonii*, 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, *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 Atlantic Humpbacked 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 Reedbuck, *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 salt pans 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-Backed 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 12: Incremental Cost Analysis

SENEGAL: Integrated Marine and Coastal Resources Management Project

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 11 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 the mandate of protected areas around the principle of co-management and provision of ecological services; ii) conducting participatory assessments and monitoring of biodiversity, iii) promoting participatory surveillance and enforcement, iv) involving communities in ecotourism services, v) strengthening capacity and awareness building for local stakeholders, vi) rehabilitating and maintaining critical park infrastructure, vii) establishing 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 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) the 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 Saloum 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 strengthening of the DPN and strengthened role of the National Biodiversity Committee.	Improved coordination, monitoring, and governance of biodiversity conservation and 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		

**Additional GEF Annex 13: Ongoing Projects and Programs in the Coastal Zone of Senegal
SENEGAL: Integrated Marine and Coastal Resources Management Project**

A. Fisheries Sector

Description	Donor	Executing Agency	Objectives	Activities	Area of Intervention	Lifetime
Evaluation and management study of Senegal Fisheries Sector	JICA	DPM/CROD T	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/MEM	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/ MEM	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/ MEM	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
Development and enforcement of artisanal fisheries capacity building at Lompoul.	JICA 636 292 000 Yens	DPM/ MEM	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	Project Concept Study ongoing since February 2004. Implementation project (june 2005 to march 2006)
Traditional Fishing Support	FED-AFD 5,1 billion	DPM/ MEM	Support to traditional fishing channels for a	<ul style="list-style-type: none"> · Develop coastal areas · Support resources 	12 sites (From the Petite	Up to 2005

Program in southern Senegal (PAPA-SUD)	FCFA		sustainable development.	management · Reinforce professional organizations capacities · Support the development of fish products · Train beneficiaries	Côte to Casamance)	
Sustainable Fisheries Livelihood Program (PMEDR)	DFID/R.U (FAO) 35 millions \$US	MEM	Reduce poverty of coastal communities by improving livelihoods	· 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 Heuleuk»	FFEM	Océanium	Preserve fish resources through the establishment of MPAs and public awareness	· 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	· 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	· Submerge artificial reefs · Establish MCS committees	Rufisque/Bargny	2002-2003
Aménagement quai de pêche de Thiaroye	BCI 483 millions	MEM	Construction of fish landing infrastructures for artisanal fisheries	· Improve landing sites · Build a pier and temporary shelters · Sanitation and road works	Thiaroye	Ongoing
Aménagement du quai de débarquement Ouakam	BCI	MEF MEM /DPM		· Improve landing sites Sanitation works	Ouakam	Completed
Aménagement d'aires de transformation artisanale	BCI 835 millions FCFA	MEM		· 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 Approximativement 800 millions FCFA	MEM /CEP	Sustainable management of the fisheries sector	· Establishment of local fisheries councils · Support to a task force working on a system of fishing right concessions · Audit of Senegalese registered vessels	30 sites	Ongoing

				· Census of "pirogues" BCPH training		
Stratégie sectorielle réduction pauvreté (DSRP)	Government of Senegal 29 billion FCFA	MEF/ MEM /CEP	Ensure sustainable management and rehabilitation of fish resources Satisfy national demand for fish products Commercialize fish products Improve qualifications of fisheries sector professionals	<ul style="list-style-type: none"> · Develop and implement multi-year fisheries management plans · 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 	Fisheries sector	Ongoing
Emergency recovery plan for the fisheries sector	FAO/BAD 787 million FCFA for the preparation phase	MEM /CEP	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 MEM	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	Swiss Aid	Ports-	Physical and computer	· Registration	Hann, Rufisque,	from 2002

management of fish resources	100 million FCFA	systems FENAGIE	registration of "pirogues"	<ul style="list-style-type: none"> · Computerization · Collection of statistics 	Kayar.	to 2003 (pilot project completed)
Coopération espagnole		MEM	Surveillance Refrigeration Land use planning in Langue de Barbarie		Langue de Barbarie	Ongoing
Programme frigorifique	Spain and Government of Senegal 6 357 855 342 F CFA	MEM/DPSP	Permettre aux professionnels de la pêche artisanale d'exercer leurs activités dans des conditions optimales d'hygiène et de salubrité compatibles avec un marché exigeant en matière de qualité	<ul style="list-style-type: none"> · Conception et réalisation d'un programme frigorifique 	Phase I (Saint Louis, Yoff, Yenne, Mbour, Ziguinchor) ; Phase II (localités à l'intérieur du pays)	Phase I en cours de réalisation
Regional Program for the Conservation of the Coastal and marine Zone in West Africa (PRCM)	WWF, UICN, FIBA, Wetlands International		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	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 	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)	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	communication plan · 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
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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/MME	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/MME	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/MME	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/MME	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/MME	Support to traditional fishing channels for a sustainable development.	<ul style="list-style-type: none"> ● Develop coastal areas ● Support resources management ● Reinforce professional organizations capacities ● Support the development of fish products ● Train beneficiaries 	12 sites (From the Petite Côte to Casamance)	Up to 2005
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/ DPM 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/ CRODT	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 MME/DPM		<ul style="list-style-type: none"> ● Improve landing sites ● Sanitation works 	Ouakam	Completed
Aménagement d'aires de transformation artisanale	BCI 835 millions FCFA	MME		<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	MME/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 	30 sites	Ongoing

				<ul style="list-style-type: none"> right concessions ● Audit of Senegalese registered vessels ● Census of "pirogues" ● BCPH training 		
Stratégie sectorielle réduction pauvreté (DSRP)	Government of Senegal 29 billion FCFA	MEF/ MME/CEP	<ul style="list-style-type: none"> ● Ensure sustainable management and rehabilitation of fish resources ● Satisfy national demand for fish products ● Commercialize fish products ● Improve qualifications of fisheries sector professionals 	<ul style="list-style-type: none"> ● Develop and implement multi-year fisheries management plans ● 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 	Fisheries sector	Ongoing
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 	Fisheries sector	2001-2003

				<ul style="list-style-type: none"> ● Rationalize fish product transformation 		
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		MME	<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 	<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 	CRSP countries: Mauritania, Senegal, The Gambia, Guinea Bissau Cape Verde Guinea	Under preparation

			protection of fish resources and of coastal marine ecosystems	• Integrate MPA in sustainable fisheries strategy	
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B. Forestry Sector

Programme de Gestion Intégré des Ecosystèmes Sénégalais (PGIES)	UNDP	MENP	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)		MENP	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	MENP	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)		MENP	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)

Description	Donor	Executing Agency	Objectives	Activities	Area of Intervention	Lifetime
Projet d'Appui Institutionnel au Secteur de l'Environnement au Sénégal	Coopération française	MEPN	Renforcer les capacités d'analyse et d'action du MEPN en permettant à la DPN d'assurer la conservation de deux aires protégées grâce à l'implication effective et durable de leurs populations riveraines, en préservant la diversité biologique, en organisant le cadre institutionnel et en rationalisant la valorisation des ressources	i) Remise à niveau des services; ii) Mise en place d'un cadre institutionnel approprié; iii) Mise en place d'un cadre approprié; iv) Mise en œuvre de la gestion participative	PNIM, PNLB	-
Appui budgétaire pour le secteur de l'Environnement au Sénégal	Pays-Bas 5,5 million d'euros	MEPN	Appui financier au budget de l'Environnement et de la Protection de la Nature	i) Education environnementale aux écoles primaires et secondaires, gestion durable des forêts dans le cadre de la lutte contre la pauvreté; ii) Organisation du ramassage des ordures dans les grandes villes et aménagement de deux dépotoirs; iii) Suivi de la pollution à Dakar, et formation en suivi des impacts environnementaux; iv) Renforcement de la DPN et protection des zones humides inscrites auprès de la convention de Ramsar.	-	juillet 2003 -décembre 2004
Renforcement des capacités de gestion des zones humides en Afrique de l'Ouest	Pays-Bas	UICN MEPN/DPN	Promouvoir des mécanismes de gestion intégrée et d'utilisation rationnelle des ressources naturelles de la RBDS, afin de maintenir ses processus écologiques et conserver sa biodiversité, avec la	i) diagnostic participatif des ressources et des capacités; ii) études thématiques et synthèse des connaissances sur la RBDS iii) mise en oeuvre de micro-réalisations avec	RBDS	1997 - 2001

			participation des populations intéressées.	les populations dans un processus itératif de recherche-action; iv) élaboration du Plan de gestion de la RBDS.		
Projet de la Périphérie du Djoudj (PPD)	GTZ	DPN	Gérer la périphérie du Parc.	Amélioration des conditions de vie des populations riveraines; Elaboration d'un Plan d'Aménagement et de Gestion en 2002	PNOD et Périphérie	1997-2003
Projet Quinquennal de Gestion Intégrée (PQGI)	Pays-Bas	UICN	-	Elaboration et Mise en Œuvre d'un Plan Quinquennal de Gestion Intégrée	PNOD et Périphérie	1995-1999
Projet Triennal de Gestion Intégrée (PTGI)	Pays-Bas	UICN	-	Elaboration et Mise en Œuvre d'un Plan Triennal de Gestion Intégrée	PNOD et Périphérie	2000-2002
Projet de Gestion Intégrée des Ecosystèmes du Sénégal	FEM	PGIES		Mise en place RNC	Gandon	
Projet de Gestion Intégrée des Ecosystèmes du Sénégal	FEM	PGIES			RBDS	
Projet de Réintroduction de l'Oryx	International Fund for Animal Welfare (IFAW)	DPN	Conserver les espèces en danger	Introduction <i>Oryx dammah</i>	Réserve Spéciale de Faune de Gueumbeul	En cours
Appui à la gestion communautaire des ressources naturelles des forêts de mangrove dans la Réserve de la Biosphère du Delta du Saloum - Sénégal	1,540,000 Euros dont UE 1,230,000 Euros	ADG, ASBL Nature +, ONG, WAAME, DPN	Disposer de techniques de gestion durable des forêts de mangrove du delta du Saloum, reproductibles au niveau des communautés de base et favorisant la mise en œuvre d'un développement durable conciliant les aspects de valorisation des produits issus de ces écosystèmes et les aspects de sauvegarde de la biodiversité	Élaboration de plans de gestion et formation aux techniques d'exploitation durable de la mangrove; Régénération des zones de mangrove dégradées et mise en place de pépinières villageoises Diffusions de techniques apicoles et de captage ostréicole Amélioration des filières de commercialisation (céréales locales, huîtres, murex et cymbium, bois ...) via l'appui des groupements existants Sensibilisation,	Quatre communautés rurales (Toubacouta, Djilor, Djirnda et Bassoul)	septembre 2002 - août 2005

				formation et information des populations locales aux règles d'accès et de prélèvement des ressources naturelles		
Projet de réhabilitation et de gestion intégrée des ressources de zones humides communautaires dans le site RAMSAR du Delta du Saloum.	NC-IUCN/ SWP The Netherlands	WAAME	Gestion intégrée des ressources des zones humides marines et côtières	Sensibilisation, formation, élaboration de plans locaux de gestion de zones humides communautaires, renforcement de capacités des Organisations et Associations villageoises, écotourisme.		-
Projet ECOSOLIDAR	Ecosolidar ONG Suisse	WAAME	Renforcer les capacités, lutter contre la Pauvreté.	fumage et séchage du poisson avec introduction de fours améliorés réduisant la consommation du bois de mangrove, appui aux femmes insulaires dans la commercialisation des produits halieutiques.	les femmes des villages de Rofangué, Baoute, Vélingara(Région de Fatick, Département de Foundiougne)	2003
Etude pour une Gestion Durable de la Mangrove de la Petite Côte et du Delta du Saloum	JAFTA Japon	WAAME	Renforcer les capacités des populations locales et des organisations communautaires de base, pour la mise en oeuvre, la gestion et l'exploitation durable des écosystèmes de mangrove	Ateliers de formation	Bassoul, Mbam, Gagué Chérif, Kamatare Bambara	30 Avril 2003 au 15 Septembre 2004
Projet de Réhabilitation des habitats de mangroves et sensibilisation sur les oiseaux	-	WAAME	Contribuer à la réhabilitation d'habitats fragiles de mangroves et la sensibilisation sur les oiseaux dans les zones humides transfrontières	sensibilisation des différents acteurs et partenaires à une meilleure gestion des ressources,visites d'échanges entre producteurs ruraux et formation	zones humides transfrontières du Niumi (The Gambia) et Saloum (Sénégal)	1997-2002
Programme de formation aux techniques de gestion durable des ressources naturelles	Région Wallonne APEFE	APEFE-DPN	former les agents et guides des parcs et réserves aux techniques de suivis écologiques et de gestion de la faune sauvage	développement de l'éco-tourisme et formation de jeunes éco-gardes, recrutés dans la périphérie des parcs	Parcs et Périphéries	
Appui aux communautés de	PMF-FEM \$1,500.00	Tropical Service	-	- identification participatives du		Octobre 2001

base pour la formulation du projet de protection du PNLB		(Tropis)		problème à résoudre -élaboration et rédaction du projet		
Lutte contre la pollution des eaux par la collecte et la transformation des ordures ménagères et des déchets halieutiques (Kayar)	PMF-FEM/UNDP \$25,893.00	Comité Villageois de Développement		la Réhabilitation de milieux naturels avec le reboisement pour réduire l'avancée des dunes, -la lutte contre la pollution des eaux par la collecte, la transformation des ordures ménagères et des déchets halieutiques. - la Protection du couvert végétal	Kayar	Octobre 1994 - Septembre 1997
Projet communautaire de conservation de la biodiversité à la réserve spéciale de Gueumbeul	PMF-FEM/UNDP \$48,206.00	Collectif Liggeyel Gueumbeul	Contribuer à la sauvegarde des espèces faunistiques et floristiques de la Réserve spéciale de Gueumbeul dans le Delta du Fleuve Sénégal en -réhabilitant et en régénérant l'écosystème de la réserve- en impliquant les populations dans la gestion de la réserve- en promouvant les activités alternatives (lutte contre le braconnage)	Démonstration Renforcement de capacités		Décembre 2002 -Décembre 2003
Projet communautaire de lutte contre la pollution du Lac de Guiers et du Fleuve Sénégal	PMF-FEM/UNDP	Entente des Groupements Economiques du Diéri	- réduire le rejet dans les eaux et le milieu, - amener les populations à adopter un changement de comportements dans l'usage des pesticides - développer des activités de protection de l'environnement	- la sensibilisation sur l'utilisation et la gestion des pesticides - mobilisation sociale et vulgarisation de produits verts -la formation à la formulation, à l'utilisation des biopesticides . Au total, 50 séances de formation et de sensibilisation sont prévues avec l'appui de personnes ressources faisant partie des services de l'agriculture et de la protection des		Janvier 2002 -Décembre 2003

				végétaux		
Projet d'aménagement et de mise en valeur de l'île de Diatt du village de Palmarin Ngallou	PMF-FEM/ UNDP \$48,653.00	Convention pour la Rénovation de Palmarin	Lutter contre la désertification et la dégradation des sols de l'île de Diatt engendrées par l'action combinée de la nature et des humains. Comprend des activités de réhabilitation, des activités à caractère économique, et des actions de sensibilisation/formation.	Formations spécifiques en techniques de conduite et de gestion des activités du projet : aménagement du parc arboré, construction de bassins de rétention d'eau, aménagement de parcours touristiques et d'abris (oiseaux migrants).		
Projet d'aménagement et de gestion de la forêt classée de Soutouto et d'un arboretum au Centre Fagaru dans la Réserve de Biosphère du Delta du Saloum	PMF-FEM/ UNDP \$44,832.00	Structure d'Appui et d'Aménagement pour le Développement (SAPAD)	Revaloriser le savoir traditionnel et freiner le processus de désacralisation de la forêt classée de Soutouto.	Conservation de la biodiversité et renforcement des capacités organisationnelles des structures locales pour une gestion durable des ressources naturelles et le développement de l'écotourisme	RBDS	Août 2001 -Juillet 2003
Projet d'Appui au Transfert de la Technologie des turbines éoliennes au Sénégal : expérience pilote dans la Réserve de Biosphère du Delta du Saloum	PMF-FEM/ UNDP \$50,000.00	Association Sénégalaise d'Energies Renouvelables et Alternatives (ASERA)	Concourir à baisser la pression énergétique exercée sur les écosystèmes de la Réserve de Biosphère du Delta du Saloum par la mise à la disposition des populations riveraines d'énergie renouvelable et alternative qui puissent satisfaire à leur besoin en énergie domestique et en électrification rurale	Transfert de technologie et de savoir-faire quant à la maîtrise des productions des turbines éoliennes; Formation du personnel de l'atelier de montage et de turbines par un ingénieur néerlandais pendant 3 mois; Formation d'un ingénieur sénégalais en Hollande ; Création d'une ligne de crédit pour soutenir les actions de création de micro-entreprises dans l'industrie éolienne ; Réduction des dépenses domestiques en combustibles ligneux.	Réserve de Biosphère du Delta du Saloum	Octobre 2000 -Septembre 2002
Projet d'Appui aux communautés de base pour la	PMF-FEM/ UNDP \$1,500.00	Tropical Service (TROPIS)		Identification participative du problème à résoudre; Elaboration et	Djoudj	Octobre 2001

formulation du projet de protection des Oiseaux du Djoudj				rédaction du projet		
Projet de généralisation de la mise en place des récifs artificiels: stratégie de lutte contre la pollution de l'environnement et du maintien de la biodiversité	PMF-FEM \$50,000.00	Fédération Sénégalaise de Pêche Sportive (FSPS)	Conserver la biodiversité sur tout le littoral, lutter contre les pollutions de l'environnement marin et permettre le repeuplement des espèces en général et des poissons à rostre	Immersion d'épaves en vue de créer une ceinture de récifs le long du littoral sénégalais, créant ainsi des zones d'agrégats et de reproduction de poissons	Tout le littoral sénégalais	Août 2001-Janvier 2003
Projet de gestion participative des sources de pollution de la Baie de Hann	PMF-FEM/ UNDP \$26,000.00	Comité Intersectoriel de Suivi (CIS)	Arrêter sinon réduire substantiellement les pollutions de la Baie de Hann en promouvant une bonne compréhension et une prise de conscience par rapport aux pollutions afin d'amener les principaux pollueurs que sont les populations et les industriels à s'impliquer activement dans des actions visant à atténuer la dégradation de la baie	Renforcement de capacités ; Recherche appliquée et analyse des politiques.	Hann	Août 2001 -Janvier 2003
Projet de Gestion Durable de la Biodiversité du Terroir de Niodior	PMF-FEM/ UNDP \$27,839.00	Félogie et Comité de Plage de Niodior (FCPN)	-	Conservation des sites importants de biodiversité; Mise en place et organisation d'un système de rotation des sites de cueillette des fruits de mer régénération assistée de la mangrove; Environnement de la plage assaini et frein des coupes abusives au niveau de la mangrove; Valorisation des produits halieutique et amélioration des revenus des femmes		Octobre 2001-Septembre 2002
Projet de Gestion durable de la	PMF-FEM/ UNDP \$21,916.00	Félogie et Comité de Plage de	-	Conservation des sites de biodiversité et aménager des aires de	Terroir de Dionewar (RBDS)	Octobre 2000 -Septembre

biodiversité du terroir de Dionewar dans la zone de transition de la Réserve de Biosphère du Delta du Saloum		Dionewar (FCPD)		pêche; Création et adoption d'un code de conduite de gestion durable de l'estuaire du saloum et protection des aires ichtyofauniques; Mise en place d'un dispositif institutionnel propre à la Réserve de la biosphère du Saloum; Assainissement du milieu marin et de la plage; Valorisation des produits halieutiques ; Régénération assistée de la mangrove; Réalisation de pare feux et de bois villageois		2002
Projet de Gestion Intégrée de la Biodiversité des Ecosystèmes de mangroves dans la Réserve de la Biosphère du Delta du Saloum	PMF-FEM/ UNDP \$27,781.00	West African Association for Marine Environment (WAAME)	-	Renforcement des capacités techniques des populations pour la réhabilitation de la mangrove et du milieu marin; Gestion intégrée de la biodiversité des écosystèmes de mangrove; Installation d'un site d'expérimentation ostréicole; Mise en place d'une pépinière expérimentale et de 2 bois villageois; Formation aux techniques ostréicoles et mise en valeur du savoir traditionnel		Décembre 1997 -Mai 1999
Projet de lutte contre la pollution des eaux internationales dans la Baie de Hann	PMF-FEM/ UNDP \$16,335.00	Association pour une Dynamique de Progrès Economique et Sociale (ADEPS)	Amélioration du cadre de vie en réduisant la pollution de la baie de Hann; Education et sensibilisation; Transformation des ordures et déchets en compost; Assainissement de la	-	Hann	Septembre 1994-Août 1997

			baie et mise en place d'édicules publics			
Projet de lutte contre la pollution des eaux internationales dans la Baie de Ngor	PMF-FEM/ UNDP \$5,806.00	Comité de Pilotage et de gestion de la plage de Ngor (CPN)	-	Protection de la baie contre la pollution ; Information, éducation et sensibilisation des populations; Latrinitisation et plantation des filaos le long de la baie.	Ngor	Octobre 1994-Septembre 1996
Projet de lutte contre les végétaux aquatiques nuisibles: <i>Salvinia molesta</i> et <i>Aeschynomene elaphroxylon</i> dans les eaux du fleuve Sénégal et du Parc National du Djoudj	PMF-FEM/ UNDP \$50,000.00	Association <i>Diapanté</i>	Consolider et d'étendre les acquis en terme de lutte mécanique contre les espèces nuisibles	Implication de 2890 hommes/jour en terme de main d'oeuvre pour l'extraction des plantes, leur évacuation et leur transformation; Implication de ces population dans la pose et le l'entretien du matériel de protection des ouvrages hydrauliques (grillage); Implication de 2890 hommes/jour en terme de main d'oeuvre pour l'extraction des plantes, leur évacuation et leur transformation; Implication de ces population dans la pose et le l'entretien du matériel de protection des ouvrages hydrauliques (grillage); Formation des populations en technique d'inventaire quantitatif des sites infestés; Utilisation d'un système d'information géographique sur l'état de la menace du salvinia; Mise en place d'un programme d'information et de sensibilisation et de création de comités de lutte contre l'introduction des plantes nuisibles dans la vallée;	Delta du Sénégal	Janvier 2002-Juin 2002

				Mise en oeuvre de projets communautaires génératrices de revenus à partir du Fonds d'Appui à l'Environnement et au Développement pour assurer une source de revenus aux populations qui participent à la lutte mécanique et surtout pour la continuité des activités de suivi et de maintien après la fin du financement		
Projet de lutte contre une plante envahissante (<i>Salvinia molesta</i>) dans les eaux du Fleuve Sénégal et au Parc National des Oiseaux du Djoudj	PMF-FEM/ UNDP \$50,000.00	Association Diapanté	-	Dégager les plans d'eau envahis par la plante <i>Salvinia</i> Renforcer le dispositif de protection des ouvrages d'admission et élaborer une stratégie de lutte mécanique; Mise en oeuvre d'une action pilote de recherche et de valorisation des résidus de la plante après extraction mise en place d'un système de suivi évaluation	Delta du Sénégal	Octobre 2000-Juin 2001
Projet de Préservation des Algues du Sénégal	PMF-FEM/ UNDP \$50,000.00	SOS Environnement (SOSE)	Préserver les algues dans les parties du Plateau continental mettant en avant la connaissance, l'utilisation et la gestion durable	Faire l'état de la ressource alguale (inventaire et identification de la position systématique des algues au niveau des localités ciblées); Préserver le biotope et la ressource alguale; Valoriser les algues selon les critères culturels spécifiques au Sénégal; Informer et sensibiliser les populations dans la reconnaissance des espèces à grande valeur	Plateau continental	Novembre 2002 -Novembre 2004
Projet de protection des tortues vertes et	PMF-FEM/ UNDP \$29,059.00	Fonds Rural pour le Développement	Conserver, protéger et valoriser les tortues marines de <i>Palmarin</i> et	Mise en défens et protection des sites de nidation mise en place	Palmarin et Fandiong	Octobre 2000 -Septembre

de leurs habitats à Palmarin et Fandiong dans la Réserve de Biosphère du Delta du Saloum		du Tiers-Monde (FRD)	leurs habitats naturels.	d'une écloserie lâchage de 80% des oeufs sur les plages d'origine; Suivi des tortues taguées et lâchées Réduction du spectre de prédation Collecte, traitement analyse et diffusion des données sur la tortue verte		2002
Projet de Protection du Parc National des Oiseaux de Djoudj (PNOD)	PMF-FEM/UNDP \$48,260.00	GIE des Ecogardes de la Périphérie du PNOD (GEPP)	Contribuer à la protection et la gestion du PNOD par l'amélioration des relations populations/PARC	Gestion directe du projet à travers le comité locale de gestion de la biodiversité; Protection du Parc contre la divagation des animaux ; Reboisement de la périphérie du PARC; Réhabilitation de la volière (clinique de la nidification); Réalisation des travaux en apportant une main d'oeuvre et une partie des matériaux ; formation en techniques de gestion des ressources naturelles -IEC- management et gestion communautaire ; Aménagement des digues pour lutter contre la salinisation ; Maraîchage, transformation du poisson et Imise en oeuvre du crédit revolving (FAED) pour la valorisation des produits; Mise en place d'un cybernature.	PNOD	Janvier 2002 - Décembre 2003
Projet de réhabilitation, de conservation et d'utilisation des terres salées dans la vallée côtière de Diofior-Rho-Simal	PMF-FEM/UNDP \$41,225.00	Fédération Inter-villageoise des Organisation pour le Développement (FIOD)	-	Réhabilitation (rectification d'ouvrages hydrauliques anti-sel et de retenue d'eau douce) sur une période de 3 ans pour promouvoir l'agriculture; Reboisement des terres salées et la mangrove ; Amélioration des aires de pâturage de la vallée;	Vallée côtière de Diofior-Rho-Simal	Septembre 1998-Août 2001

				développement d'activités productives (maraîchage) au profit des femmes.		
Projet de restauration de l'écosystème de mangrove dans la zone de Fimel-Djilor-Simal	PMF-FEM/ UNDP \$22,530.00	Coordination des Associations pour la Restauration des Ecosystèmes Marins (CAREM)	-	Restauration de 37 ha de mangrove et regarnissage de 12 ha ; Vulgarisation des techniques propres d'exploitation des ressources et promotion des moyens d'existence durables ; Echanges d'expérience entre associations ; établissement d'un cadre de partenariat avec les différentes associations et ONG actives dans la protection des écosystèmes de mangrove	Zone de Fimel-Djilor-Simal	Octobre 2000 Septembre 2002
Projet d'éducation à la préservation de la biodiversité dans 10 écoles élémentaires et la sensibilisation à la gestion de l'environnement par la population locale de la langue de Barbarie	PMF-FEM/ UNDP \$35,501.00	-	Former les enseignants et les futurs responsables des clubs nature à la vulgarisation de notions d'écologie et de l'éco-citoyenneté	Sensibilisation des acteurs locaux (pêcheurs, mareyeurs) Formation des équipes pédagogiques et des élèves , et des animateurs de clubs nature à l'écologie ; Création de clubs natures et organisation d'échanges d'expériences	Langue de Barbarie	Octobre 2002- Octobre 2004
Projet d'extension de la régénération communautaire de la mangrove dans les régions de Fatick et de Kaolack	PMF-FEM/ UNDP \$25,917.00	Association Populaire des Volontaires pour la Réhabilitation ASPOVRECE	Réhabiliter les sites dégradés de la mangrove à partir du reboisement communautaire - stabiliser les berges et limiter l'extension des tannes (terres salées) ; Renforcer les capacités les structures villageoises (comités villageois de réhabilitation de la mangrove	Mise en place d'un comité intervillageois de gestion pour l'exécution du programme avec la participation de partenaires animateurs pour l'information et la sensibilisation; Formations techniques en gestion durable des zones humides, en sylviculture de mangrove, en décentralisation et gestion des ressources	2à villages de 4 communautés rurales des régions de Fatick et Kaolack	

				naturelles et en gestion des organisations; Education environnementale en milieu scolaire et en milieu non formel ; Capitalisation des acquis du projet (conception et diffusion de 100 manuels sur le reboisement en langues locales, mise en réseau des animateurs)		
Projet d'intégration du cocotier dans les écosystèmes côtiers du Sénégal	PMF-FEM/ UNDP \$50,000.00	Association Jardins d'Afrique (AJA)		démonstration		Août 2001 -Juillet 2003
Protéger le Parc National de la Langue de Barbarie (PNLB) "Projet de sauvegarde de l'avifaune"	PMF-FEM/ UNDP \$47,948.00	Groupe des Ecogardes/ PNLB (GEPNLB)	Protéger le PNLB des mutations hydrauliques et des actions néfastes de l'homme par la : consolidation et la réhabilitation des îlots d'oiseaux; Augmentation de la surface d'accueil des oiseaux; Suivi des oiseaux et balisage de l'îlot; Assainissement et protection du Parc par le reboisement (lutte contre l'ensablement)	Balisage de l'îlot aux oiseaux; Sensibilisation à l'environnement; Formation aux techniques de gestion de projets; Participation des populations à la gestion du Parc; Mise en oeuvre du Fonds d'Appui à l'Environnement et au Développement; Mise en oeuvre d'activités d'écotourisme.	PNLB	Janvier 2002- Décembre 2003
Renforcement du projet de restauration et de conservation de la biodiversité par un groupement de femmes à la réserve naturelle de Popenguine	PMF-FEM/ UNDP \$21,392.00	Regroupement des Femmes de Popenguine pour la Protection de la Nature (RFPPN)	-	Restauration et gestion d'une réserve naturelle (reboisement, regarnissage, lutte anti-érosive); Réhabilitation de la mangrove et sauvegarde des lagunes; Formation et encadrement des groupements de femmes villageois voisins de la réserve; Renforcement du corps des jeunes volontaires; Fructification	Réserve Naturelle de Popenguine	Décembre 1997-Décembre 1999

				d'activités écotouristiques à partir du Fonds d'Appui à l'Environnement et au Développement; Gestion de petites unités productives d'embouche.		
Restauration et conservation de la biodiversité par un groupement de femmes à la réserve naturelle de Popenguine	PMF-FEM/ UNDP \$11,600	Regroupement des Femmes de Popenguine pour la Protection de la Nature (RFPPN)		Restauration et gestion d'une réserve naturelle; Réhabilitation de la mangrove et sauvegarde des lagunes, à la conservation de la biodiversité; Formation et encadrement des groupements villageois voisins de la réserve	Réserve Naturelle de Popenguine	Juillet 1994-Juillet 1996
Programme de Développement de l'Espace Naturel Keur Cupaam	Union européenne et la Fondation française Nicolas Hulot 2,5 millions de FF	COPRONAT -Fondation Nicolas Hulot-DPN	Proposer un modèle de gestion des aires protégées intégrant les populations et contribuant à leur développement économique .	Appui à la réserve, appui aux groupements (champs collectif avec puits, magasin pour combustibles et céréales, pour chaque village); Construction de deux magasins centraux, l'un à Popenguine et, l'autre à Kiniabour; Acquisition de charettes pour chaque village ; Costruction d'un centre de formation équipé et d'une salle informatique; Formation sur les techniques de pépinières, de reboisement et de compostage etc.	Popenguine Tefess, Popenguine Sérère, Kiniabour 1, Kiniabour 2, Guéréo, Sorokh Kassab, Ndayane, Thiafoura.	1997-2000
Projet de Renforcement des capacités en Afrique de l'Ouest pour un réseau régional en gestion des zones humides et des oiseaux d'eau.	Wetlands International	Wetlands International DPN	Formation et renforcement des capacités des décideurs, des agents de terrain impliqués dans la gestion et le suivi des écosystèmes et des oiseaux d'eau au Sénégal	-	-	Depuis 1998
Programme Grue Couronnée	Disney Conservation	Wetlands International	Conserver la Grue couronnée (<i>Balearica</i>	Déterminer les facteurs qui influencent la	Delta inférieur du Fleuve	2000-2003

	Award, ICF, Wetlands International Bureau Afrique de l'Ouest Sam Evans et Chester zoo	et International Crane Foundation (ICF)	<i>pavonina</i>)	reproduction et les déplacements de l'espèce dans les zones humides converties en terres agricoles au Sénégal; Elaborer un plan d'action.	Sénégal	
Projet d'actions de conservation pour la cigogne noire (<i>Ciconia nigra</i>) en Afrique de l'ouest	Wallonie, Wetlands International, Bureau Ramsar		Déterminer le statut de la cigogne et les menaces qui pèsent sur elle en Afrique de l'Ouest, d'initier des actions pour sa conservation et de faire connaître davantage cette charismatique espèce migratrice en Afrique	Plan d'action pour la conservation de la cigogne.	Zone d'hivernage des cigognes noires (Delta Fleuve Sénégal)	
Programme Education et Sensibilisation du Public aux zones humides			Préconiser des actions visant à établir les priorités et les mécanismes susceptibles de sensibiliser davantage le public aux fonctions, services et valeurs des écosystèmes des zones humides.	Elaboration d'un document de base qui fait le point sur l'état de l'éducation et de la sensibilisation		
Projet de planification côtière de la Réserve de Biosphère du Delta du Saloum/Programme de Suivi et de Recherche	UICN 44,605,000 FCFA dont 28,974,000 versés au CRODT	CRODT	-	Suivi biologique de la ressource (crevette, ethmalose, mollusques marins d'intérêt économique); Caractérisation de l'aire protégée de Pata Ngouss; Evaluation du repos biologique observé dans la cueillette des mollusques marins	RDDBS	2000-2004

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 		
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				<ul style="list-style-type: none"> • 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 	

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 14: Issues requiring donor coordination
SENEGAL: Integrated Marine and Coastal Resources Management Project**

Key issue to be addressed	Potential donors	Critical areas of overlap with the project	Key areas of agreement sought from donors and Government
Use of comanagement as main tool for management of coastal fisheries and biodiversity	All	TURFs are essential for project design	Use of comanagement for 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, Switzerland, France, FAO	Necessary for coastal zone management	Type of registration, approach to reach fishermen consensus, regular updating of system

**Additional GEF Annex 15: STAP Roster Technical Review
SENEGAL: Integrated Marine and Coastal Resources Management Project**

**Preliminary STAP Review : SENEGAL
Project Concept Document
Integrated Marine and Coastal Resource Management: P058367**

1. 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. 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.

2.1 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.

2.2 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.

2.3 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

2.4 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.

3. Secondary issues

3.1 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,

3.2 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.

3.3 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

3.4 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.

3.5 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

**Response to the STAP Review
SENEGAL
Integrated Marine and Coastal Resource Management: P058367**

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

1. Summary of main points

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.

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

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.

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.

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.

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 PCD), 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. The detailed composition and the ToRs of these committees will be finalized during Project preparation.

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.

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.

The project does addresses 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.

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.

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

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.

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.

3. Secondary Issues

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.

As mentioned above, the 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.

The PCD has been revised and now mention linkages to the Programme de Gestion Intégrée des Écosystèmes du Sénégal (PGIES), as well as the Senegal River Basin Project.

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.

This is an interesting point and it will be further addressed in the 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.

Industrial/commercial fisheries are already included taken into account by the inclusion of representatives on the Project Committee.

In the fisheries context, the use of comanagement is explained on Page 14 and on Page 18-19). 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 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.

A participation plan will be developed prior to Project appraisal and included into the PAD.

République du Sénégal

**Ministère de l'Environnement
et de la Protection de la Nature**

Ministère de l'Economie Maritime

***Lettre de politique
De gestion intégrée des ressources marines et côtières***

Juillet 2004

Contexte

Le Sénégal, dans le souci de mettre en œuvre la Convention des Nations Unies sur la Diversité Biologique, ratifiée le 17 octobre 1994 et mise en vigueur le 15 janvier 1995, a pris l'initiative dès 1997 d'un « Projet de Gestion de la biodiversité marine et côtière (PGBMC) » avec l'appui de la Banque Mondiale, grâce à une subvention du Fonds pour l'Environnement Mondial (FEM). En outre, le Sénégal s'est engagé depuis novembre 2000 dans l'élaboration d'une stratégie d'aménagement et de gestion durable des pêches et de l'aquaculture, ainsi que dans la définition d'un cadre intégré d'assistance au commerce extérieur du Sénégal. Le Programme GIRMaC résulte de la volonté de l'Etat du Sénégal d'intégrer et de coordonner ces actions et de faire face aux insuffisances des politiques sectorielles. Placé sous la co-tutelle technique respective du Ministère de l'Environnement et de la Protection de la Nature (MEPN) et du Ministère de l'Economie Maritime (MEM) le programme GIRMaC a pour objectif global « d'appuyer le Gouvernement du Sénégal et les communautés locales dans la gestion durable des ressources marines et côtières.

Cette gestion durable implique une exploitation responsable des ressources, notamment halieutiques, combinée à la protection des écosystèmes et des processus écologiques critiques pour le renouvellement des ressources ». Cet objectif s'inscrit parfaitement dans la vision du Président de la République déclinée lors du Sommet Mondial de Johannesburg sur le Développement Durable et lors du 5ème Congrès Mondial de Durban sur les Parcs.

Le programme GIRMaC vise une intégration des principes du développement durable dans la gestion des ressources marines et côtières. Les impacts généraux attendus de la mise en oeuvre du programme sur l'économie et l'environnement du pays concernent :

- ✓ La réduction de la pauvreté des personnes dépendantes des ressources marines et côtières, conformément aux orientations stratégiques du DSRP ;
- ✓ La réduction de la dégradation des ressources halieutiques telle que visée dans la politique de développement durable des pêches ;
- ✓ La conservation des habitats critiques pour le maintien des ressources, en conformité avec la politique environnementale du Sénégal et avec les Conventions pertinentes.

Au plan des contraintes et menaces multi-sectorielles, ce programme vise à faire face, pour le moyen et long termes :

- ✓ A la crise environnementale, sociale et économique grave qui frappe la pêche et qui compromet la survie des communautés littorales, provoquant l'accentuation de la pauvreté dans les zones côtières où se concentrent plus de la moitié des populations et l'essentiel des activités économiques du pays (tourisme, pêche, industries, maraîchage, etc) ;
- ✓ A l'augmentation des risques bio-écologiques, sociaux et environnementaux qui font craindre un appauvrissement des écosystèmes marins et côtiers, et de la biodiversité, à un point tel qu'ils ne puissent supporter une exploitation durable des ressources de la biodiversité.

Par ailleurs, l'absence de plans de gestion opérationnels des activités du littoral axés sur la conservation de la biodiversité et l'utilisation durable des ressources halieutiques et le manque de concertation entre les parties prenantes exacerbent les problèmes et sapent les bases de la viabilité et de durabilité des activités socio-économiques de la zone marine et côtière.

Stratégies et actions visées

La gestion intégrée des ressources marines et côtière est sous tendue par trois considérations

stratégiques :

- (i) **Approche Programme.** la politique de GIRMaC s'inscrit dans une approche programme multi-bailleurs de fonds visant à répondre à la crise actuelle des ressources marines et côtières. Il associera différents bailleurs de fonds autour d'objectifs communs et d'une synergie d'action, notamment la Banque Mondiale, la FAO, la Banque Africaine de Développement (BAD), l'Agence Française de Développement (AFD), la Coopération Française (SCAC) et la JICA (Japon).
- (ii) **Promotion de la cogestion dans la gestion des pêcheries artisanales :** La Cogestion est une action de gestion qui implique le partage des responsabilités et des compétences, sur les ressources, entre le Gouvernement et les usagers. Elle repose sur un accord formel négocié entre les partenaires et dont le résultat est un plan de gestion qui stipule des objectifs, les droits et responsabilités des partenaires. La cogestion est aussi un processus par lequel un partenariat dynamique est établi soit avec la communauté soit avec les parties intéressées en utilisant les capacités et les intérêts des pêcheurs locaux et de la communauté. Il faut également y ajouter la capacité de l'état à fournir une législation performante, à s'assurer de son application et également à fournir différents types d'assistance.
- (iii) **Approche écosystème.** L'originalité du projet est l'articulation entre l'approche écosystème proposée par la FAO pour la pêche et l'approche écosystème proposée par le FEM pour la biodiversité. La politique de GIRMaC repose sur une mise en oeuvre concertée de mesures de gestion des ressources marines et côtières par les acteurs de la pêche et de la conservation dans les zones d'intervention. La remise en état des pêcheries nationales implique forcément la réhabilitation et conservation des habitats et des espèces menacées par la gestion « écosystémique » à l'intérieur et autour des aires protégées et des zones de pêche. Dans le même ordre d'idée, la conservation des habitats et de la biodiversité, notamment par la création d'aires protégées, doit prendre en considération les questions sociales et économiques qui fondent les activités de pêche.

En matière sociale, un système de microfinancement pour l'assistance à la reconversion des pêcheurs et pour la mise en oeuvre de solutions alternatives à la pratique de la pêche artisanale est en cours de mise en place dans le cadre du programme GIRMaC. Un Fonds de Développement Communautaire pour les communautés de pêche sera mis en place dans le cadre d'un partenariat avec l'Agence du Fonds de Développement Social (AFDS).

Pour appuyer ces principes d'action, il appartiendra à l'Etat de définir un cadre institutionnel, juridique et réglementaire performant pour permettre au Programme de contribuer positivement **i)** à la restauration du patrimoine naturel du Sénégal et à la conservation des écosystèmes importants pour la sauvegarde de l'environnement mondial et, **ii)** à la gestion durable des pêcheries pour un renouvellement des ressources halieutiques. La complexité des problématiques liées aux ressources marines et côtières et la multitude des acteurs, des secteurs et des structures impliqués exige un cadre partenarial très large et diversifié susceptible de créer une synergie autour de la mise en oeuvre des Conventions et instruments internationaux pertinents :

- ✓ Au niveau national, la politique de GIRMaC s'appuie sur la participation de tous les partenaires à la mise en oeuvre, au suivi et à l'évaluation des plans d'aménagement et de gestion des aires protégées et des pêcheries prévue par le programme GIRMaC ainsi que d'autres projets nationaux .
- ✓ Au niveau sous régional, la Commission Sous Régionale des Pêches (CSRP) a élaboré et adopté plusieurs instruments juridiques destinés à harmoniser certains aspects des politiques de pêche des Etats. Une place importante vient d'être donnée aux questions environnementales liées à la gestion des pêches dans un récent plan d'action stratégique.

Sur les directives du Président de la République, le Sénégal va initier très prochainement l'organisation

d'une Conférence sous régionale des Ministres chargés de l'Environnement et des Pêches pour jeter les bases d'une stratégie à long terme de gestion intégrée des ressources marines et côtières. Le projet de stratégie sous-régionale, qui s'inscrit dans le cadre d'opérationnalisation du Plan d'Action Environnemental du Nouveau Partenariat pour le Développement en Afrique (NEPAD), permettra de développer une vision commune et intégrée de la mer et de ses ressources pour impulser le développement durable des zones marines et côtières et la satisfaction des besoins et aspirations des communautés littorales.

Mesures et engagements politiques

Toutes les mesures institutionnelles nécessaires au renforcement du processus de pilotage de la mise en place d'une politique de GIRMaC, seront prises par l'Etat. En ce sens, pour le secteur de la pêche, le Gouvernement a créé la Commission Spéciale de restructuration du secteur de la pêche. La mise en œuvre des mesures d'urgence à formuler par cette commission est déterminante pour l'atteinte des objectifs de gestion durable des pêches du programme GIRMaC. En effet, dans le contexte politique national de décentralisation et de gouvernance locale, le Ministère de l'Economie Maritime a exprimé sa volonté d'accompagner et de favoriser les initiatives de cogestion. Dans ce cadre, la pleine responsabilisation des communautés de pêcheurs et la mise en place des conseils locaux des pêches maritimes dans les zones d'intervention du projet feront l'objet de dispositions techniques à prendre par le Ministère de l'Economie Maritime pour la cogestion locale des ressources halieutiques.

En ce qui concerne la biodiversité, le Gouvernement élaborera une loi-cadre de conservation de la biodiversité et des aires protégées couvrant la réforme du système de gestion des aires protégées, la mise en place des organes nationaux de coordination et les modalités de création et de gestion des fonds fiduciaires.

Conclusion

La gestion durable des ressources marines et côtières, y compris la diversité biologique, constitue une très haute priorité pour le Gouvernement du Sénégal. Les enjeux de la gestion intégrée se posent également au niveau sous-régional, voire ouest africain. En conséquence, nous réaffirmons notre volonté de tout mettre en œuvre pour la bonne exécution du programme mais également pour assurer la durabilité à la fois écologique, économique et sociale des résultats attendus au cours des cinq prochaines années.

Fait à Dakar, le _____ 2004

**Le Ministre de l'Environnement
et de la Protection de la Nature**

**Le Ministre d'Etat,
Ministre de l'Economie Maritime**

