



Global Environment Facility

Mohamed T. El-Ashry
*Chief Executive Officer
and Chairman*

1818 H Street, NW
Washington, DC 20433 USA
Tel: 202.473.3202
Fax: 202.522.3240/3245
Email: mclashry@worldbank.org

January 9, 2001


Dear Council Member:

UNDP, as the Implementing Agency for the project, *India: Conservation and Sustainable use of the Gulf of Mannar Biosphere Reserve*, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the Council in May 1999 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments and those of the STAP reviewer have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.gefweb.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,



Mohamed T. El-Ashry
CEO and Chairman

cc: Alternates, Implementing Agencies, STAP



United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY (GEF)



22 November, 2000

Dear Mr. El-Ashry,

Mohamed:

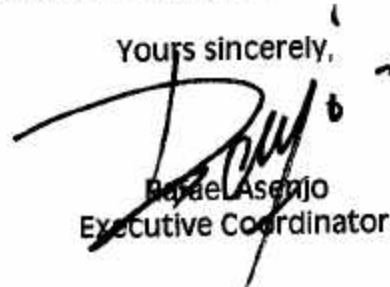
Subject: IND/99/G31/A/1G/99- Conservation and Sustainable Use Of the Gulf of Mannar Biosphere Reserve's Coastal Biodiversity

I am pleased to enclose the project for India entitled "Conservation and Sustainable Use Of the Gulf of Mannar Biosphere Reserve's Coastal Biodiversity" approved by the GEF Executive Council in May 1999. Also enclosed is the response to comments provided by the GEF Secretariat and Council.

As per paragraph 29 and 30 of the GEF Project Cycle, we are submitting this project to you for circulation to the Executive Council Members for comments and, subsequently, for your final endorsement.

Thank you in advance for expediting the review and approval of this project.

Yours sincerely,



Rafael Asenjo
Executive Coordinator

Mr. Mohamed El-Ashry
Chief Executive Officer
Global Environment Facility
Room G6005
1776 G Street
Washington, D.C. 20433
PM

UNITED NATIONS DEVELOPMENT PROGRAMME
Project of the Government of India
Project Document

Project Title : Conservation and Sustainable-use of the Gulf of Mannar Biosphere Reserve' s Coastal Biodiversity
Project Number : IND/99/G31
Estimated Starting Date : July 2000
Duration : 7 Years
Project Sites : Gulf of Mannar,
ACC/UNDP Sector : 0400 Natural Resources
ACC/UNDP : 0430 Biological Resources
Government Sector : Environment
Government Sub-Sector : Natural Resources/Biological Diversity
Government Counterpart : Department of Economic Affairs, Ministry of Finance
Executing Agency : Ministry of Environment and Forests, Government of India through
UNDP and Cost-Sharing Financing

UNDP and Cost Sharing	
UNDP/GEF	: US\$ 7,650,000
Counterparts Contribution	: US\$ 19,085,000
(in Cash and Kind as follows:)	
UNDP	1,000,000
GOI/ GoTN	16,965,000
MSSRF/CMFRI,	
Banks/Private	1,120,000
Total	: US\$ 26,735,000

*U.N. official exchange rate when signing project document August 2000 US \$ 1= 44.67

Brief Description: The overall objective of this project is to conserve the Gulf of Mannar Biosphere Reserve' s globally significant assemblage of coastal Biodiversity and to demonstrate, in a large biosphere reserve with various multiple uses, how to integrate Biodiversity conservation and sustainable coastal zone management and livelihood development. The focus of the project is on empowering local communities to manage the coastal ecosystem and wild resources in partnership with Government and other stakeholders and making all accountable for the quality of the resulting stewardship. Specific Government and village-level institutional capacities will be strengthened, stakeholders will apply sustainable livelihoods, and an independent, statutory Trust will ensure effective inter-sectoral co-operation in the sustainable conservation and utilisation of the GoMBR' s biodiversity resources.

On behalf of	Signature	Date	Name and Title
Government of India (DEA) Ministry of Finance	_____	_____	R.S. Sharma Joint Secretary
Department of Environment & Forests Government of Tamil Nadu	_____	_____	S. Rajarathnam Secretary
UNDP	_____	_____	Brenda Gael McSweeney Resident Representative

Project Document

United Nations Development Programme
Global Environment Facility

**“Conservation and Sustainable-use of the Gulf of Mannar
Biosphere Reserve’s Coastal Biodiversity”**

Project of the
Government of India
and
the State Government of Tamil Nadu

Contents

ANNEXES

ACRONYMS

A. Context

A.1 Description of Project Area

Ecological Context

Socio-Economic Context

B. Project Justification

B. 1 Problem to be Addressed: The Present Situation

Policies, Legislation and Institutions:

Threats to Biodiversity

Current and Planned Activities:

B.2 Target Beneficiaries

B.3 Expected End of Project Situation

B.4 Project Strategy and Implementation Arrangements

B.5 Rationale and Eligibility for GEF Support

B.6 Reasons for UNDP Assistance

B.7 Co-ordination Arrangements

C. Project Objectives, Outputs and Activities

D. Risks

E. Relationship with Other On-Going GEF and Related Initiatives

F. Prior Obligations and Prerequisites

G. Financial and Accounting Arrangements

H. Project Review, Reporting and Evaluation

I. Legal Context

J. Special Features

K. Budget

ANNEXES

- Annex 1a: UNDP-GEF Budget Contribution
- Annex 1b: Summary of GEF & Co-Funding Inputs
- Annex 2a: Project Planning Matrix/ Logical Framework
- Annex 2b: Sequencing Of Outputs over Project Life
- Annex 2c: Overall Operational Plan for 1st Year
- Annex 3a: Terms of Reference – Staff
- Annex 3b: Terms of Reference - Contracts
- Annex 4: Financial Mechanism
- Annex 5: GoMBR Trust Description
- Annex 6: Public Participation Plan
- Annex 7: Equipment List
- Annex 8: Incremental Cost Assessment
- Annex 9: Analysis of Threats and Proposed Actions
- Annex 10: Project Implementation Arrangements/Institutional Summary
Figure 1: Institutional Linkages
- Annex 11: Schedule of Project Reviews, Reporting, and External Evaluation
- Annex 12: Maps of the Gulf of Mannar
- Annex 13: Standard Annex to sub-programme /project documents for use in countries, which are not party to the Standard Basic Assistance Agreement (SBAA).

ACRONYMS

BoBP	Bay of Bengal Programme
CAN	Coastal Action Network
CBD	Convention on Biological Diversity
CMA	Coastal Management Authority
CMFRI	Central Marine Fisheries Research Institute
CSMCRI	Central Salt and Marine Chemical Research Institute
CRZN	Coastal Regulation Zone Notification
DAHf	Department of Animal Husbandry and Fisheries
DoEF	Department of Environment and Forests, Government of Tamil Nadu
FSD	Fisheries Department
FD-WW	Forestry Department-Wildlife Wing
GEF	Global Environment Facility
GoI	Government of India
GoTN	Government of Tamil Nadu
Ha	Hectare
ICZM	Integrated Coastal Zone Management
IIT	Indian Institute of Technology
IUCN	The World Conservation Union
MCF	Marine Conservation Funds
MSSRF	M.S. Swaminathan Research Foundation
MoEF	Ministry of Environment and Forests (Government of India)
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-governmental Organization
PDF-B	Project Development Facility, Block B (GEF project development grant)
RDD	Rural Development Department
SWD	Social Welfare Department
TNPCB	Tamil Nadu Pollution Control Board
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
URAs	User Rights Agreements
VMCC	Village Marine Conservation Councils
WB	World Bank
WWF	World Wildlife Fund
ZSI	Zoological Survey of India

A. CONTEXT

A.1 Description of Project Area

Environmental context: India is one of the world's twelve megadiversity countries, which together account for 60-70% of the world's biological diversity. Comprised of over 130,000 species of plants and animals¹, India's biological diversity can be attributed in part to the country's ten bio-geographic zones, from the Trans-Himalayan to the Coastal, and its location at the confluence of three major bio-geographic realms, the Indo-Malayan, the Eurasian, and the Afro-Tropical. The Gulf of Mannar is located on the southeastern tip of India in the state of Tamil Nadu. The Gulf is known to harbour marine biodiversity of global significance, falling within the Indo-Malayan realm, the world's richest region from a marine biodiversity perspective. The Gulf's estimated 3,600 plant and animal species make it one of the richest coastal regions in India.

The Gulf of Mannar Biosphere Reserve (hereafter referred as the Reserve) is located in the coastal marine zone of the Gulf itself. It is the first marine Biosphere Reserve not only in India, but in all of South and South-East Asia. The Reserve has been selected as an international priority site based on criteria such as bio-physical and ecological uniqueness, economic, social, cultural, scientific importance, national and global significance². The IUCN Commission on National Parks and Protected Areas, with the assistance of UNEP, UNESCO and WWF, identified the Reserve as being an area of "particular concern" given its diversity and special, multiple-use management status. The Reserve was one of six areas chosen for inclusion into an action programme to save India's protected areas for future generations on the basis of its threatened status and richness of biological wealth³.

The Reserve is comprised of a 560 km² core area of coral islands and shallow marine habitat, surrounded by a 10 km wide, 160 km long buffer zone. The Gulf of Mannar Marine National Park (hereafter referred to as the Park) comprises the core area of the Reserve and is made-up of 21 uninhabited islands ranging in size from 0.25 ha to 130 ha and lying between one and four km offshore, surrounded by shallow waters. The buffer zone is comprised of Gulf waters to the south and an inhabited coastline to the north (See map in Annex 12).

Seventeen different mangrove species occur within the Reserve and act as important nursery habitats. One species, *Pemphis acidula*, is endemic to the Reserve; five other mangrove species occur here and nowhere else in India. The shallow waters of the Park have the highest concentration of seagrass species along India's 7,500 km of coastline. All six genera and 11 species of seagrass recorded in India occur in the Reserve. Six of the world's twelve seagrass genera and eleven of the world's fifty species occur here. One species of seagrass, *Enhalus acoroides*, a monospecific genus of seagrass is endemic to the Reserve. These same shallow waters are also known to have at least 147 species of marine algae (seaweed). These seagrass and algal beds support complex ecological communities and provide feeding grounds for many animals, including the globally endangered marine mammal, dugong (*Dugong dugong*).

¹ Mittermeyer, R., and T. Werner. 1990. "Wealth of plants and animals unites 'megadiversity' countries". In *Tropicus* 4:4-5.

² Kelleher, G., Bleakly, C. and Wells, A. *Global Representative System of Marine Protected Areas*, Volume II, 1995

³ Rajiv Gandhi Foundation. "Protecting India's Endangered National Parks" Rajiv Gandhi Foundation, 1995).

Productive fringing and the patchy coral reef surrounding the Park's islands are comprised of at least 91 species of coral belonging to 37 genera. The islands are used by 168 migratory bird species. The sandy shores of most of the islands provide a nesting habitat for sea turtles and all five species of marine turtles have been recorded nesting on the islands. Of the 2,200 fish species in Indian waters, 450 species (20%) are found in the Gulf, making it the single richest coastal area in the Indian subcontinent in terms of fish diversity. Over 79 species of crustaceans, 108 species of sponges, 260 species of molluscs, and 100 species of echinoderms occur in the Gulf.

The Park's Krusadai Island exemplifies the biological significance of the Gulf. The island's surrounding shallow waters harbours three species of seagrass that are found nowhere else in India. Representatives of every animal phylum known (except amphibians) are found on this island. The island is also home to an endemic organism called balanoglossus (*Ptychodera fluva*), a taxonomically unique living fossil that links vertebrates and invertebrates. The island is referred to in the region as a biologist's paradise.

Socio-economic context: India has a total population of over 900 million people, with a growth rate of 2.1% per annum. Over 70 million people live in the state of Tamil Nadu. Approximately 100,000 people live in the 44 villages along the Reserves' coastal area. A participatory rural appraisal and socio-economic benchmark survey of 1,000 households were conducted under Block B project preparation activities. Both covered the coastal areas of the two districts within the Reserve's coastal buffer zone: Tuticorin and Ramanadapuram. They revealed that the livelihood of people in villages upto 10 km away from the coastline is at least partly dependent upon coastal and marine resources. Villages over 10 km from the coast have little interaction with the coast and are largely dependent upon agriculture and allied activities.

Over 35,000 of the 100,000 people living in the Reserve's buffer zone make their living from fishing, seaweed collecting, or other marine-based activity. Of the 35,000, approximately 20,000 live in villages directly abutting the coast who make their living from the sea. Ninety percent of these fisherfolk are artisans (using wind or small engine powered craft) and 10% are mechanized trawler fishermen. The Reserve's fishery is dominated by lesser sardine, silver belly, sciaenid, mackerel, anchovy, thread fin, bream, holothurian, lobster, molluscs and prawns. Mechanized boats exploit these resources by multi-gear systems such as fish trawls, pair trawls (illegal), drift nets, gill nets and bottom set gill nets. Smaller, traditional motorized and non-motorized boats use bag nets, purse seines, gill nets, trammel nets, and hook and line set-ups.

The on-going mechanization of the fishery has displaced women from their traditional role in processing and marketing, forcing them to take up alternative livelihoods. Existing livelihood-related programmes in the buffer zone area do not provide adequate economic alternatives, and in particular do not adequately meet the needs of women fisherfolk. As a result, peoples' only alternative livelihood option has been the harvesting of wild seaweed or coral, which they have been over-harvesting. Existing livelihood programmes are also plagued by information gaps preventing the most needy people from accessing information on appropriate technologies, markets and reasonable lines of credit. Currently, moneylenders provide most of the available credit at prohibitively high rates of interest.

The population of the city of Tuticorin is approximately 3,20,000. Located just outside the southern tip of the Reserve's buffer zone, it is a regional electrical power centre with some manufacturing, an ISO 9002 port facility, a large salt making industry, and serves as a local fishing centre. Tuticorin's fishing fleet is the most mechanized/modernized in this part of India. Consequently, these boats are able to and do exploit the fishery far offshore and for the most part, outside of the Reserve boundaries.

B. PROJECT JUSTIFICATION

B. 1 Problem to be Addressed: The Present Situation

Policies, Legislation and Institutions:

The GoI and the state of Tamil Nadu designated the coastal marine area of the Gulf of Mannar as a National Biosphere Reserve in 1989 in order to conserve the Gulf's 21 coastal islands and their surrounding shallow water mangrove, coral and seagrass habitats. In India, biosphere reserve and national park management responsibilities are primarily vested with the state government. The Ninth Five-Year Plan of the Government of Tamil Nadu, 1997-2002, describes the baseline activities planned for implementation in the project area. Despite the government's recognition of the significance of the Reserve as well as its willingness to develop cross-sectoral mechanisms to successfully manage the Reserve, higher funding priorities have meant that the GoMBR has struggled to maintain minimum levels of operation. There is no indication in the existing baseline scenario that this situation will change.

The institutions and respective laws and policies affecting Tamil Nadu's coastal zone are somewhat disparate and uncoordinated. Several institutions have legal and policy mandates related to proposed project activities within the Gulf of Mannar. The Tamil Nadu Forest Department, Wildlife Wing (FD-WW) of the Department of Environment and Forests has primary responsibility for the Park's 21 islands and their surrounding marine environments. The FD-WW receives its Park management authority from two Acts. The *Tamil Nadu Forest Act* (1887) gives it the responsibility for the sustainable management of forest (mangrove) resources and is the legal instrument under which the GoTN develops and enforces forest management regulation. This is applicable not only to the mangrove forests in the Park, but also to fuel wood plots along the coastal area of the Park's buffer zone. The *Wildlife Protection Act* (1972) vests the FD-WW with the authority to enforce wildlife protection measures and establishes a Wildlife Advisory Board to formulate policies for the conservation of terrestrial and marine wildlife and to identify and select priority areas to be protected.

The *Tamil Nadu Marine Fishing Regulation Act* (1983) regulates fishing in the coastal waters of Tamil Nadu, including the Reserve waters surrounding the islands. The Tamil Nadu Fisheries Department (FSD) of the Department of Animal Husbandry and Fisheries is responsible for enforcing the prescribed regulations under this Act in order to ensure sustainable fishery management. The Act empowers the FSD to regulate the catching of fish in any specified area, the types of fishing gear to be used, and the class of fishing vessels allowed in certain areas.

Two laws are in force to prevent and control land-based pollution along the Gulf's coast: the *Water Prevention and Control of Pollution Act (1974)* and the *Air Prevention and Control of Pollution Act (1974)*. These laws prescribe the standards for effluent discharge and air emissions and established the Tamil Nadu Pollution Control Board (TNPCB) to enforce these prescriptions. The TNPCB also administers the GoI's *Coastal Regulation Zone Notification (CRZN, 1986)* issued by the Ministry of Environment and Forests. The Notification regulates land-use on the coastline, sets specific pollution control measures, and requires new development to be set back at least 200 metres from the high-tide mark.

Tamil Nadu is the first state in India to initiate the development of an Integrated Coastal Zone Management Plan, establishing a state-wide Integrated Coastal Management Authority (CMA) in August 1998. Each of Tamil Nadu's coastal district collectors have in turn established a district-level, multi-sectoral CMA. These district-level CMAs are comprised of officials from other institutions and are responsible for ensuring compliance with the CRZN. The TNPCB offices are responsible for supporting the work of the district-level CMAs and for convening regular CMA meetings in the two coastal district offices whose territory is part of the buffer zone. The CMAs will play an important role in this project.

Threats to Biodiversity

Annex 9 provides details on the threats and the root causes of the Reserve's loss of biodiversity. The primary threats to the globally significant biodiversity of the Reserve are, in order of importance:

- a. habitat destruction;
- b. over-harvesting of marine resources; and
- c. potential, localized land-based marine pollution from a low number of civic point-sources.

Habitat destruction (coral reefs, seagrass beds, mangroves) is the most serious threat to the long-term viability of the Park's globally significant resources. Coral mining, though it is illegal, has stripped most of one island's coral and threatens to do the same in other parts of the Park. Seagrass beds are harmed by inappropriate bottom trawling practices. The root causes of habitat destruction are:

- a. Lack of integrated management of the Reserve (Park and its buffer zone).
- b. Insufficient enforcement of protected area laws.
- c. Inadequate level of proactive management/Insufficient management information.
- d. Lack of local community support for the Park.
- e. Insufficient public awareness.
- f. Lack of clarity in the demarcation of protected area boundaries.
- g. Lack of alternative livelihood options.

The waters in the buffer zone around the Park currently suffer from the growing cumulative impacts of over-harvesting of marine resources which threaten to disrupt the ecological balance supporting globally significant biological resources in the Park and the Reserve as a whole. In a situation where there is no control exerted over who takes how much, the result has been the larger mechanized boats are catching most of the fish, precluding the smaller, traditional craft

from catching their share. This in turn forces traditional craft to take up destructive practices, such as mangrove cutting and coral mining in and around the Park. The root causes of the threat of over-harvesting are:

- a. Lack of effective, marine resource property regimes.
- b. Lack of community management capacity.
- c. Insufficient enforcement of existing marine resource use rules and regulations.
- d. Lack of alternative livelihood options.
- e. Lack of adequate and fair credit arrangements.
- f. Lack of management information to drive good management decisions.

Localized pollution outside of the southern tip of the buffer zone represents a potential threat to the Reserve's biological diversity. Development underway in the southern part of the Tuticorin district is of concern to the long-term management of the reserve, however no discernible impact upon the Park's biodiversity has been detected from any resulting pollution. The potential threat of pollution to the Reserve has been caused by:

- a. Lack of management information to support a more proactive enforcement programme.
- b. Inadequate enforcement of existing laws and policies.
- c. Lack of awareness of the importance of the Reserve.

Current and Planned Activities :

Protected Area Management. Park management presently operates at a minimal level, with resources and capacities inadequate to the task of conserving the globally significant biodiversity within its boundaries. A budget of under US\$100,000 per year keeps the management of the Park to its bare minimum, paying the salaries of a skeletal staff. At the same time, Government appropriations vary each year, making it difficult to plan long-term management efforts. The FD-WW has 20 part-time enforcement officers and two boats stationed along the 160 km coast. Management of the Park can be characterized as a top-down "fences and fines" approach. Park resources are insufficient to train staff in marine park management and the resulting lack of adequately trained staff and support facilities means that constructive interaction with the communities would not be possible.

The lack of a cooperative relationship between Park management and buffer zone communities hampers enforcement of the ban on coral mining and other activities. No concerted effort exists for the Park management to collaborate with local communities to remove the primary root causes of threats to the Reserve's biological diversity. Enforcement of existing laws within the Park is limited to *ad hoc* patrols and interventions. The current management plan calls for more enforcement, the restoration of key habitats, public awareness, a long-term management plan, and staff training. However, despite best intentions, funding constraints and the lack of community involvement results in only the minimal work being done.

Plans have been made for mangrove surveys and coral restoration, but their implementation is hampered by a lack of technical capacity and funding, resulting in minimal proactive field management of the priority habitats and species (mangroves, seagrass beds and coral) in the Park. The FD-WW does not have the expertise to adequately develop and carry out management and restoration programmes for these communities. Information that could be used to guide these management programmes is practically non-existent, and the degradation of the Park's

seagrass beds, mangroves, and coral reef communities is expected to proceed apace. It is also expected that populations of key species would continue to decline, and possibly even disappear.

Public Awareness. The Park has produced pamphlets, posters, and brochures describing the significant species and biological values of the Park. Despite this, awareness among local people of the significance of the biodiversity within the Reserve is very low. Only 10% of those surveyed during the Block B had ever heard of the Reserve or the National Park. There is no educational programme to impart conservation values to local children and wider awareness raising efforts using the media at the local, state or national level.

Buffer zone biodiversity conservation. There is no overall management of the Reserve, nor is there any mechanism for doing so. While the FSD is the agency primarily responsible for managing the buffer zone, it serves mainly as a welfare agency for the fishing communities. There is minimal enforcement of regulations designed to protect the overall health of the Reserve's ecosystem and important biological communities. Biodiversity conservation, natural resource management and community development efforts in the buffer zone are not integrated at the ground level.

A small number of different groups presently conduct basic ecological and environmental research in the buffer zone and Park, which lacks focus and is not used to support the conservation of the Reserve's biodiversity. The Fisheries College and Research Institute has conducted ecological research on fisheries resources. The Central Marine Fisheries Research Institute (CMFRI) in Mandapam regularly gathers fish catch data for selected commercial species, but there is no mechanism by which to share this information with either the FSD or the Park management, and no programme to ensure that monitoring efforts focus on priority information needs. Research activities in the Reserve are uncoordinated so as to contribute to the conservation of biodiversity within the Reserve.

Marine Resource Management. The FSD is responsible for regulating the use of marine resources within the buffer zone to ensure a sustainable catch. The FSD has a small programme to reduce the loss of fish brought to market by improving docking facilities and access to markets. No cooperative management of the fishery resource base with the fishers is undertaken. As a result, the buffer zone's marine resources are an open access resource under increasing pressure. Although each fisher is required to join a fishing society in his/her village, no property regime is in place to control access to this resource. These societies serve primarily to receive welfare from the FSD. This assistance is not linked to the development of any overall management regime and no local societies have filled this void with a *de facto*, fisher-enforced property regime.

Existing laws designed to sustainably utilize the Reserve's marine resources by banning the use of trawlers in shallow waters as well as the use of small-mesh size nets and seasonal restrictions on various species are inadequately enforced due to lack of resources. The lack of any kind of effective property regime for coastal marine resources has resulted in a reduced catch/effort ratio. More effort is increasingly required to obtain the same amount of catch. As a result, incomes have dropped in real terms, which in turn has forced people into other, non-sustainable practices such as coral mining and wild seaweed collecting.

Provision of alternative livelihoods. Existing research programmes in the area are leading to the development of appropriate technologies for alternative livelihoods in seaweed farming and pearl oyster farming. For example, the Central Salt and Marine Chemical Research Institute (CSMCRI) in Mandapam specializes in researching appropriate seaweed cultivation methodologies. However, research institutions lack the mandate and the expertise to transfer this technology to local people. No sustainable alternative livelihood options exist yet for the local marine resource user.

Pollution monitoring and control. Until recently, pollution control measures in Tamil Nadu have largely been voluntary, with industry reporting their emission levels to the TNPCB. During the Block B project development period, however, the state government took a more proactive approach to pollution control in the coastal zone by establishing two district-level CMAs to enforce state coastal zone regulations. These limit development in and their associated impacts on the coastal zone, supported by the state-wide CMA. The government has taken tough, proactive measures to control pollution in recent years, having banned destructive mariculture development in the coastal zone. The potential sedimentation and pollution threats from the proposed Sethusamudram canal project are recognized as being very serious and are being fully addressed as part of an ongoing public discussion of the feasibility of the project. Most of these efforts, including the CRZN law, are focussed on pollution control and do not take into account biodiversity conservation concerns. The CMAs do not yet have the capacity to address biodiversity conservation issues.

B.2 Target Beneficiaries

The target beneficiaries of this project are:

- a. Local village institutions (panchayat members, cooperatives, schools)
- b. Local resource users (fishers, coral miners, seaweed harvesters)
- c. Government institutions (Policy-making officials in ministries and local government, managers of biological resources from germane government departments)
- d. Scientists, representatives of business and industrial users of biological resources, and national NGOs with a stake in biodiversity issues

B.3 Expected end of project situation

The conservation of the Gulf of Mannar's globally significant biodiversity will be ensured by incorporating biodiversity conservation principles and practices into sustainable development interventions within the Biosphere Reserve. The strengthened Trust will have developed and begun implementation of an integrated biodiversity conservation and coastal zone management for the Reserve. The Trust will have leveraged additional co-funding to ensure the sustainability of the project. This will be a demonstrable and replicable model for biodiversity conservation and coastal zone management for the state of Tamil Nadu and India as a whole. The operational capacity of the Park will be strengthened and the Park will be zoned for priority habitat management. Buffer zone communities will be participatory stakeholders in park management. Degradation of priority habitat areas (seagrass, mangroves and coral reefs) will be stopped and active management of key wildlife species and plant communities underway. The dugong

habitat will be conserved, with the expectation that dugongs will be seen regularly feeding in seagrass beds. Nesting beaches will be protected allowing for the safe nesting of sea turtles. Coral reef, seagrass and mangrove management will be undertaken and demonstrated as a result of improved training in environmental management and restoration.

In the buffer zone, pressure on biodiversity resources will be reduced. Biodiversity conservation will be a priority objective of fisheries management and community development efforts in general. Threats to Park biodiversity will be addressed by a consolidated biodiversity management regime in the buffer zone and an empowered partnership between strengthened local community organizations and government agencies. Biodiversity conservation decisions within the Reserve will be based upon sound information provided by a targeted research and monitoring programme. Staff from key institutions will have been trained in integrated coastal zone management and an effective pollution monitoring and control programme will ensure the Reserve's marine ecosystem maintains its capacity to support globally significant biodiversity. Stakeholders, enabled by project-supported demonstrations, will substitute destructive non-sustainable livelihoods with sustainable biodiversity-friendly alternative activities. Marine resource use will be controlled by a combination of informal property regimes enforced by fisher cooperatives and a more proactive, official enforcement regime with biodiversity maintenance as a priority. This new sustainable development approach will be supported by substituted baseline funding from the Government of Tamil Nadu and the Government of India. This new sustainable development approach (substituted baseline) is the integration or adaptation existing planned schemes of various GOI and GoTN line ministries and departments along the lines of the project objectives.

B.4 Project Strategy and Implementation Arrangements

Alternative Strategy

The GEF supported alternative is designed to demonstrate how to integrate biodiversity conservation into coastal zone management plans and implement the same in a large biosphere reserve with various multiple uses. To this end, the GoTN will establish the GoMBR Trust to ensure effective inter-sectoral coordination and facilitate mainstreaming of biodiversity conservation issues into the productive sector and policy development. The Trust will enable the project to build upon the existing and planned sustainable development activities and incorporate biodiversity conservation considerations into them. The Trust will allow for project methodologies and results to be replicated for the rest of the coastal area of Tamil Nadu and serve as an institutional model for India as a whole. The Trust will have statutory authority and play a focal role in the implementation of this project, providing the institutional framework and working with Government to strengthen the overall policy framework to enable government agencies to better coordinate and collaborate in the enforcement of coastal zone regulations, including biodiversity conservation. Careful attention will be given to defining the respective multi-sectoral responsibilities of, and relationships among, the key institutional stakeholders.

The FD-WW, in cooperation with local communities, will implement a sustainable conservation programme for the Park. The FSD will implement a sustainable fisheries harvest programme in the buffer zone. A framework plan for the incorporation of biodiversity conservation into

development plans for the buffer zone of the Reserve will be prepared, consisting of biodiversity overlays. The local communities associated with the Reserve's buffer zone will adopt sustainable alternative sources of livelihoods, reducing and alleviating pressures on the Park. District and state governments will strengthen their programme to sustainably manage the coastal zone of the Gulf, including the establishment of a pollution control office in Tuticorin City and a sustainable development baseline monitoring programme for pollution prevention in the Gulf. Topping-up this baseline, project resources will enable the two District governments, through the CMAs, to develop and apply biodiversity criteria in their coastal zone management work. In order to ensure the long-term sustainability of project results, the project will support the Government in establishing a long-term funding mechanism for the GoMBR to receive funds to implement a framework management plan for the Reserve. This mechanism will facilitate and ensure cooperation and collaboration between and among various government agencies for Reserve management. The Trust will ensure that the project is implemented in a strategic and fully coordinated manner so that the Biosphere Reserve is managed as a single unit. A key function of the Trust is to ensure that duplication and overlap is avoided in the implementation of the project.

Implementation and Execution Arrangements (See Annex 10 for more details)

The Project will be executed by the Tamil Nadu Department of Environment and Forests (TNDofEF) in close collaboration with the national Ministry of Environment and Forests. The state government of Tamil Nadu and the Government of India are committed to applying a new and innovative approach in India to the development of a long-term, multi-sectoral biodiversity conservation programme in the Gulf of Mannar. To do this, the TNDofEF (with GoI support) will establish the "Gulf of Mannar Biosphere Reserve Trust" under the Tamil Nadu Societies Registration Act as an independent governmental statutory body. The Trust will play more than an advisory role and will be designed as a flexible, transparent and innovative structure and will ensure appropriate integrated coastal development actions in the Reserve.

The Trust will have a Board of Trustees comprised of 15 leading representatives from the following key stakeholder groups: GoTN (4), MOEF (1), DEA (1), MSSRF (1), UNDP (1), Local community representatives (2), NGOs (2), Private sector (3). The Board of Trustees will be independent, multi-sectoral, and with a balance of stakeholders.

The Trust will:

- ⇒ play a crucial role in integrating the various sectoral activities in the project Reserve area. There is currently no mechanism by which to do this and the Trust will be breaking new ground in this respect.
- ⇒ be fully "owned" by the Government of Tamil Nadu as well as the other crucial stakeholders. This will ensure that the Government acknowledges full responsibility to undertake actions recommended by the Trust. The Chairman of the Board will be the Chief Secretary or a senior functionary of the State Government and other Board members will be chosen based upon their standing and ability to effect change.
- ⇒ be established under the Societies Registration Act. This will give the Trust the independent statutory status making it eligible to receive and manage funding from non-traditional sources to support conservation in the Reserve on a sustainable basis. This will provide the Trust with an important level of status and independence.

- ⇒ GoTN is committed to make the Trust arrangement effective, and will ensure that adequate provisions are made during the legal registration of the Trust so that it is given a substantive development review role in the Reserve coastal zone. In this respect, the Trust will be empowered to oversee the implementation of agreed upon actions for integrated biodiversity and coastal zone management in the project area by all relevant government agencies and institutions, among other stakeholder organisations.
- ⇒ be evaluated by an independent entity during the third year of the project. Based on this mid-term evaluation, the GoTN will make further provisions under existing laws and statutes to enable the Trust to play an effective role as the apex management body for the Reserve.

A project coordination unit (PCU) will be formed under the Trust to implement the project. The Board of Trustees will also serve as the project's "steering committee" and will be called upon to provide guidance to the PCU through their own home institutions facilitating the coordination of the project's work among government agencies, NGOs, communities, and other partners. The Board of Trustees (also in its capacity as the steering committee) will meet on an twice or thrice a year for at most a two-day meeting. Execution responsibilities for various government and non-government entities will be determined on the basis of comparative advantage (field experience, past performance, technical capacity, and cost effectiveness). The PCU will be comprised of a Trust Director (TD), and a staff of technical experts. Staff on loan to the project from GoTN's FSD and FD-WW will fill at least half of these expert positions beginning in year four. The other half of these positions will be filled by staff from other government agencies, NGOs and individual biodiversity experts. The PCU will work directly with partner stakeholder institutions to produce desired outputs and achieve objectives. The TD will be responsible for the level of excellence and successful implementation of project activities. The PCU's office will be located in an area with ready access to all parts of the Reserve.

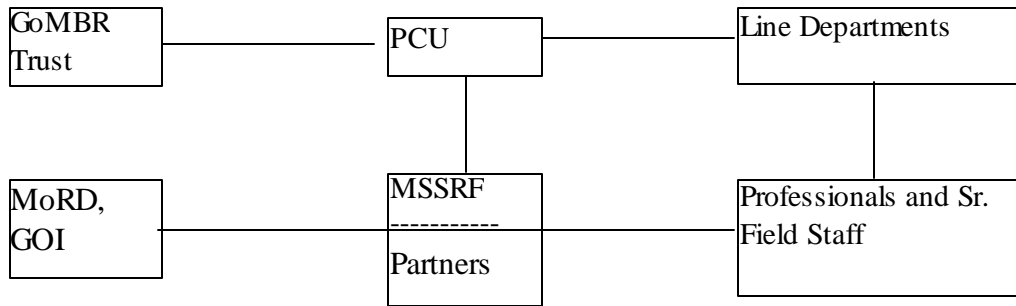
The TD should be advised and assisted by a Co-ordinating Committee comprising representatives of the stakeholder organisations, which should meet relatively frequently – on a bi-monthly basis. This Committee should have the functions of agreeing on detailed programs of action designed by the office of the TD, identifying resources, allocating activities to collaborating organisations etc. Necessary activities will include community education and involvement, day-to-day management, research, monitoring, assessment, revision of programs and projects.

The project's community level work will be enabled by two district-level coordination committees comprised of representatives of the key stakeholder groups at the local level. These committees will meet quarterly and will play a hands-on role in helping to develop and facilitate project implementation. Village Marine Conservation Councils (VMCCs) will be established in all the coastal villages in the buffer zone of the Reserve. These VMCCs will be comprised of coastal resource user groups drawn from existing panchayats (village councils). Women will comprise at least 50% of VMCC membership. These VMCCs will be key units through which project community-based protected area management consultations and sustainable livelihood development activities will be conducted. A number of project outputs will be produced through sub-contract arrangements with other organizations, government and non-government.

See Annex 10 and Figure 1 for Project Implementation Arrangements/Institutional Summary

Linkages and Co-ordination with the UNDP Funded Sub-Programme

The Trust and the PCU will both link up with the UNDP sub-programme on “Promotion of Alternative Livelihoods for the poor in the Biosphere of Gulf of Mannar”. The MSS RF which is facilitating the sub-programme activities will co-ordinate with the Project co-ordination Unit (PCU) and Trust of the GEF/Gulf of Mannar Biosphere Reserve project. At the field level three supervisors would co-ordinate with the line departments in implementing sub-programme activities. The demonstrations and activities undertaken to strengthen livelihood security would be integrated into the programme of the Trust so that the entire initiative is implemented in a strategic and fully co-ordinated manner.



The Trust Director would be nominated as a member to this sub-programme steering committee which will meet twice a year.

For Note on Public Participation : See Annex 6

B.5 Rationale and Eligibility for GEF Support

India ratified the Convention on Biological Diversity on 18 February 1994. India is a recipient of UNDP technical assistance and notified its participation in the restructured GEF on 12 May 1994 and is thus eligible according to the Article 9(b) of the GEF instrument. This project falls under the biodiversity focal area of the GEF and is in line with GEF operational strategy and programmes. The project is eligible for GEF assistance under Operational Programme #2 Coastal, Marine, and Freshwater Ecosystems.

This project is also consistent with the Convention on Biological Diversity (CBD) and its guidance from the Conference of the Parties. This project is designed to support the primary objectives of the CBD: the conservation of biological diversity, the sustainable-use of its components, and the equitable sharing of the benefits arising out of the utilization of these components. By integrating conservation and sustainable use of biodiversity into relevant plans and policies, the project will fulfil the requirements of Article 6: General Measures for Conservation and Sustainable Use. Article 7: Identification and Monitoring and Article 8: *In-situ* Conservation will be supported through the strengthening of Park management and the targeted species and habitat management, research and monitoring programme. Article 10: Sustainable Use of Components of Biological Diversity will be furthered through the development and

demonstration of alternative, sustainable livelihood options that avoid or minimize adverse impacts on biological diversity, providing incentives for sustainable use (Article 11: Incentive Measures). The project also supports Article 12: Research and Training by promoting targeted research on priority biodiversity in the Gulf, providing training in technical and managerial areas, and developing linkages for exchange of information (Article 17: Exchange of Information). Education and awareness raising is also a project priority (Article 13).

The global significance of the Gulf of Mannar's biodiversity is described under the authoritative reference work entitled "A Global Representative System of Marine Protected Areas"⁴. The IUCN Commission on National Parks and Protected Areas, UNEP, UNESCO, and WWF identified the Reserve as being an area of particular concern given its diversity and special, multiple-use management status. This initiative is country driven, being consistent with relevant National Policies and Strategies for the conservation and sustainable use of biological diversity. The Gulf of Mannar is the first marine Biosphere Reserve in South and Southeast Asia and as such, has long been a national priority. The Reserve was one of six areas chosen on the basis of its threatened status and richness of biological wealth for inclusion into an action programme to save India's protected areas for future generations⁵. The MoEF's National Environmental Action Programme (1993) specifically calls for conservation and sustainable utilization of coastal ecosystems as a top priority area 'A'. India's National Conservation Strategy also establishes the conservation of coastal ecosystems as a priority under its "Agenda for Action." The MoEF is planning to use this project's coastal planning work as a model for integrating biodiversity into the planned ICZMs for India's other eight coastal states.

B.6 Reasons for UNDP Assistance

This project complements UNDP's Country Co-operation Framework (CCF) for India and UNDP is providing co-funding from TRAC funds to support the initiative. The overall focus of UNDP's efforts in India is on poverty alleviation. This project, by arresting the processes of ecological degradation, will serve to stem an important causal factor of impoverishment in the coastal areas. There is an especially strong inter-connection between the natural environment and local social and economic systems in the coastal areas. Loss of biodiversity would have the adverse effect of foreclosing future uses of wild resources, including for both subsistence and market oriented purposes. Such a loss is incompatible with the objectives of sustainable human development. The project will catalyse a range of support from other programmes, including GoTN, GoI, MSSRF, and other private sector actors to address these problems. By doing so, it will directly enhance village welfare and provide for the ecological sustainability of development assistance. Such resource mobilisation helps to secure partnerships with other development agencies for the purposes of achieving sustainable human development objectives. This project will contribute towards the achievement of the UNDP's programmatic objectives under its three thematic areas of work in India: improving governance, addressing gender inequity and providing for sustainable livelihoods.

Governance: The project will support capacity building at various levels, including at the local (panchayat) and state government levels. Capacity to protect wildlife and habitats will be

⁴ Kelleher, G. et al, *ibid*

⁵ Rajiv Gandhi Foundation, *ibid*.

established at the local-level, with institutional mechanisms developed to conserve wild resources and provide for their sustainable use. At a provincial government level, support will be provided to update policies and legislation and strengthen wildlife and forest departments to support community-based conservation endeavours. The devolution of responsibilities for wildlife conservation to the local-level offers a number of benefits, including improving the cost-effectiveness and efficacy of conservation efforts, and strengthening linkages between government and civil society.

Gender Issues: The project incorporates a strong gender perspective in order to address the needs and priorities of women, who are important conservation stakeholders in coastal areas. This element will specifically build the capacity of women through training and awareness, enhancing opportunities for their full inclusion in conservation endeavours.

Sustainable Livelihoods: Managing biodiversity is a misnomer. Biodiversity is not managed as much as people are. This project will provide a great deal of support to enabling local stakeholders in the GoMBR to develop and apply sustainable alternative livelihoods with the purpose of reducing pressure on globally significant biological diversity. The project is significant in that it focuses on conservation and sustainable use of biodiversity in landscapes that also serve as centres of human populations. It aims at increasing the relative moral and material values attached to wild resources by local communities, firmly placing conservation objectives at the centre of the community development paradigm.

B.7 Co-ordination Arrangements

The Board of Trustees will also serve as the project's "steering committee" and will be called upon to provide guidance to the PCU through their own home institutions facilitating the co-ordination of the project's work among government agencies, NGOs, communities, and other partners. The Board of Trustees (also in its capacity as the steering committee) will meet on an twice or thrice a year for at most a two-day meeting. Execution responsibilities for various government and non-government entities will be determined on the basis of comparative advantage (field experience, past performance, technical capacity, and cost effectiveness). The PCU will be comprised of a Trust Director (TD), and a staff of technical experts. The Trust Director will be responsible for the level of excellence and successful implementation of project activities. The PCU will work directly partner stakeholder institutions to produce desired outputs and achieve objectives. The TD should be advised and assisted by a Co-ordinating Committee comprising representatives of the stakeholder organisations, which should meet relatively frequently – on a bi-monthly basis. The project's community level work will be enabled by two district-level co-ordination committees comprised of representatives of the key stakeholder groups at the local level. UNDP/India will provide advise on national execution procedures as necessary.

C. PROJECT OBJECTIVES, OUTPUTS AND ACTIVITIES

Development Objective:

Globally significant coastal biodiversity in the multiple-use area of the Gulf of Mannar Biosphere Reserve will be conserved and sustainably utilized by stakeholders.

Immediate Objective:

Establishment and effective participatory management of the Gulf of Mannar Biosphere Reserve through the application of strengthened conservation programs in the Park core area and enabled sustainable livelihood development in the Reserve as a whole.

Output 1: GoMBR Trust and Corresponding Appropriate Long-term Funding Mechanism

1.1 Establish the statutory body called the Gulf of Mannar Biosphere Reserve Trust

The Government of Tamil Nadu will establish a new statutory body for the Gulf of Mannar Biosphere Reserve called the “Gulf of Mannar Biosphere Reserve Trust.” Adequate legal provisions will be written and adopted by the Government making the Trust the apex body for decision-making related to conservation and sustainable development in the GoMBR area. The Trust mechanism is an innovative approach to develop and apply solutions to the multi-sectoral problems facing the GoMBR. The Trust will employ an adaptive management approach to ensure integrated biodiversity conservation and coastal zone development in the Reserve, and will have the authority to ensure that all developmental actions proposed by any sector in the Reserve are consistent with integrated coastal biodiversity conservation and sustainable management principles. The Trust will be comprised of a Board of Trustees and a project coordination unit (PCU). The Board will be an independent, mixed Public-private sector mechanism. It will be comprised of high-level representatives of key stakeholder entities and will serve as the executive policy-making entity of the Trust. A more detailed description of the Trust is found in Annex 5.

1.2 Establish the Project Coordination Unit (PCU)

The PCU will coordinate, oversee, and carry out project activities. Most of the project’s activities will be carried out by germane Government line ministries and departments, but there will be a great need for orchestration, coordination and oversight of these activities. The PCU will, provide technical guidance to government agencies, the private sector, and local communities on biodiversity conservation activities in monitoring, species management and cross-authorized enforcement. The purpose of this is to eventually develop a situation where collaboration among the Fisheries Department, the Forestry Department, Tourism, Rural Development, Agriculture, Industry, and local communities will be the norm in on-the-ground management of the Reserve.

1.3 Conduct a feasibility study for Long-term Funding Mechanism (LTFM) to support the Trust and associated conservation activities within the Biosphere Reserve area

The establishment of the LTFM would be done in three steps, each with milestones that must be reached prior to proceeding to the next step. Step 1: The project will provide the technical expertise to conduct a feasibility study. This support would be provided based upon the lessons learned from the GEF Evaluation of Conservation Trust Funds. The study would then be submitted to the Governments of India and Tamil Nadu and to UNDP/GEF for endorsement. The feasibility study will recommend the appropriate balance of stakeholders on the LTFM Board, and the Government already acknowledges that this Board not be government dominated as this is not appropriate for India. The critical enabling conditions for the consideration of a LTFM/trust fund is the strong commitment of the Government, at both the national and state levels, and commitment from the local stakeholders, as well as the high level of technical expertise not only in India, but specifically in the State of Tamil Nadu and its capital. Note: The Board of Trustees for the Trust and the Board of Trustees for the LTFM will be different entities.

1.4 Legally established operational structure of the LTFM & US\$ 5 million (or Rs equivalent) capitalized Fund

Step 2: If an LTFM is feasible, work will proceed to establish an LTFM for the Trust and capitalize the LTFM to provide reliable funding for re-current costs of ongoing project-inspired activities. The established structure will include a defined process for appointing trustees, grant eligibility criteria, disbursement procedures, reporting requirements, and asset management arrangements. GEF would commit up to a maximum of US\$1 million based upon a 1:4 ratio for a US\$ 5 million capitalization of the mechanism. The capitalization would be tranching, with the first tranche being a disbursement of US\$ 500,000 of GEF resources only after the equivalent of US\$ 2 million in co-financing had been deposited to the mechanism. Step 3: Co-financing of the mechanism would proceed on a 1:4 basis, with US\$ 100,000 being deposited in the mechanism for every US\$ 400,000 of co-financing deposited until the mechanism is capitalized to US\$ 5,000,000.

A project sustainability review/ study will be carried out in the 6th year of the project in order to evaluate the project sustainability and exit options.

Output 2: Strengthen the Management of the Marine National Park

2.1 Secure Full National Park Status

Currently, the Gulf of Mannar National Park has not been officially designated a national park in the final, legal sense. Management of the Park has been underway for a number of years, but this management is hampered in part by the somewhat ambiguous legal status. The FD-WW will pursue this issue and secure final legal designation of the Park.

2.2 Develop GoMNP Participatory Management Plan.

This activity will design and implement a community-based park management plan for GoMNP. The plan will identify the major challenges facing the Park and develop pragmatic actions to face these challenges. A Community GoMNP Advisory Committee will be established as part of this process, comprised of representatives from nearby communities, to provide input to the development of the management plan. This committee will continue to serve as a conduit for community input to Park management even after the management plan is completed. The Park's management plan should be developed to complement the Reserve's framework management plan to be developed by the project.

2.3 Strengthen Law and Policy Framework As Well As Law Enforcement Activities

The biodiversity conservation and resource management law and policy framework will be strengthened to enable rangers to more effectively enforce laws against habitat destruction and poaching in the Park. Lessons will be considered from the world-wide experience of other coastal/marine parks with Enforcement capacity will also be strengthened to enable more effective application of the laws and policies. The GoTN will assign additional staff to Park management which would also include staff on deputation. In addition, cooperative enforcement regimes will be developed and agreed upon among the FD-WW, Coast Guard and the FSD.

2.4 Develop and Implement a Training Programme for Park Staff

Training will be carried out to strengthen the overall management capacities of the Park. Park staff will be trained in the pragmatic "how-to" aspects of participatory management, cooperative enforcement, and research-driven adaptive management. Other relevant fields, including conservation biology, species management, community-based management approaches for biodiversity conservation, biodiversity aspects of integrated coastal zone management and data gathering will be included as well. Training will also be provided on how to integrate biodiversity concerns into existing management of marine resources and forestry.

2.5 Develop and Implement Species and Habitat Management Plans

A species and habitat management programme for the Park will be undertaken and demonstrated for priority habitats like coral reefs, seagrass, mangrove forests, dugong, and sea turtles. This species and habitat management programme will be developed for the Reserve as a whole, but will be implemented in two complementary components: one for the Park (described here) and one for the buffer zone (described under Output 3). Species and community management plans will be developed and implemented by the end of year 3 for dugong, sea turtles, coral and seagrass. Establish a coral reef re-construction demonstration by the end of year 2.

2.6 Develop and Implement a Systematic Research, Monitoring and Information Management Programme For the Park and Reserve.

The research, monitoring and information management programme will support the conservation of biodiversity within the Reserve. GEF resources will finance targeted biodiversity research and monitoring to address the problem of insufficient information for proactive Park management to ensure the conservation of globally significant biodiversity. A research committee of representatives from key regional research institutions will be formed, management-oriented research priorities defined, and requests for proposals published. These latter proposals will be financed by various donors, and may include the GEF subject to GEF criteria. A systematic monitoring and information management (GIS) programme will be established in collaboration with institutions responsible for on-going monitoring initiatives. The necessary equipment will be provided to expand existing GIS capabilities in the region to focus on the needs for ICZM and biodiversity conservation of the Reserve as a whole.

2.7 Develop Framework and Guidelines For Restorative Eco-tourism in the Park

Utilizing co-funding from the GoTN, an appropriate eco-tourism programme will be developed for the Park. This programme will guide the development of limited eco-tourism in appropriate areas of the Reserve. GEF co-funding will complement this activity by providing expert input as to how to make the programme “biodiversity-friendly” for the Park and the Reserve buffer zone.

2.8 Develop and Implement a Programme of Environmental Education and Awareness.

Public awareness of the Reserve’s conservation values will be imparted at the local, state, and, to a lesser extent, the national level in order to develop the support for long-term conservation efforts. A programme for environmental education will be developed and carried out, focusing on biodiversity conservation issues. This programme will include the development of teaching aids and training of school teachers. A youth biodiversity conservation corps will be created to involve students in Reserve conservation activities. Youth groups under the Corps will be taken on field trips into the Park and Reserve by Park staff or Trust staff and involved in habitat restoration and species conservation activities.

Output 3: Strengthen the infrastructure of the Park.

3.1 Demarcate Park Boundaries and Strengthen Physical Infrastructure

Park boundaries will be demarcated through consultations and negotiations with local community leaders. As part of the effort to develop a new participatory management plan, priority habitats within the Park will also be zoned. This participatory approach will be done as part of the demarcation process and is considered to be very important. Park infrastructure will be improved – also in an open, participatory fashion. Modest new field structures (*e.g.* guard facilities, visitor centre/interpretative facilities) will be built. The equipment necessary to carry out the required tasks of park management, research and monitoring will be procured. Training

on how to use equipment will be provided and a maintenance schedule for this equipment must be developed along with a commitment from Government to maintain equipment in the long term.

Output 4: Operational Gulf of Mannar Biosphere Reserve Management

Outside the Park, in the surrounding productive land and seascape of the reserve area, co-financing from the Government of India and the Government of Tamil Nadu will bolster the sustainable development baseline. GEF resources will be utilized to fund incremental activities that top-up this sustainable development baseline and contribute directly to the conservation of globally significant biodiversity.

4.1 Develop a Framework Management Plan for the Reserve and a Biodiversity Overlay for the Framework

A framework management plan for the Reserve will be developed and implemented. This framework will be concerned with facilitating the sustainable development of the coastal zone of the Gulf of Mannar. This framework will be a part of the GoTN's ICZM initiative. A GEF-supported biodiversity overlay for this framework for the Reserve will also be developed and implemented in parallel with the state-wide integrated coastal zone management plan (financed by the GoTN). An important component of the framework management plan will be the clear definition of Reserve boundaries, particularly in the terrestrial area. People will know whether they live within the buffer zone or in a transition area and the types of activities they can pursue on the land part and marine part will be clearly communicated. Residents and stakeholders will be fully involved in the development of the framework management plan for the Reserve, and share responsibility for its implementation. The framework management plan, supported by the Trust, will recommend policies for ensuring sustainable development within the Reserve is consistent with the inevitable growth in population.

4.2 Strengthen the Biodiversity Conservation Capacity of the CMA, FSD, and DoEF

The capacity of these key agencies will be strengthened for developing and enforcing the implementation of an integrated coastal zone management plan with a focus on biodiversity conservation. Co-financing will finance overall sustainable development activities necessary for integrated coastal zone management of the Reserve as a whole. The Government of Tamil Nadu will strengthen its coastal zone management and pollution control/monitoring efforts in the buffer zone. Government will strengthen the capacity of the CMA as part of this effort, enabling the CMA will oversee developers' compliance with coastal zone laws and ensure full consideration if given to minimizing impacts on biodiversity. GEF funds will help with enabling the CMA to ensure that biodiversity conservation activities are integrated into coastal zone development activities. CMA and Park actions will also be coordinated. Training for staff from these agencies will be conducted in economic evaluation of biodiversity, and integrated biodiversity management. GEF funds will also strengthen the links among the Trust and DoEF, DAHF, and the CMA, as the authorities responsible for implementing the Reserve's framework management plan.

4.3 Develop an Adaptive Management Approach and Implement a Comprehensive Monitoring Programme.

An adaptive management approach for the GoMBR will be established by the Trust and its partners. This approach is guided by information and is characterized by the effective use of the results of targeted research and monitoring to ensure the sustainable-use of local level resources. The end result will be adaptive, iterative and participatory implementation of the framework management plan for the Reserve. As part of the establishment of this adaptive management approach, a rigorous environmental “baseline” will be established and a complementary environmental monitoring program put in place. The TNPCB will fund pollution monitoring activities and GEF will co-finance biodiversity monitoring efforts for the Reserve.

4.4 Implement a Targeted Research Programme for the Reserve’s Biological Resources

GoI and GoTN will co-finance this targeted research program with GEF. GEF resources will top-up these efforts with a framework programme for biodiversity conservation and monitoring for the Reserve as a whole. It will determine important biodiversity conservation and environment protection criteria for incorporation into the integrated coastal zone management plan and other development plans and activities associated with the Reserve.

4.5 Define and Manage Priority Habitats Within the GoM Biosphere Reserve and Assist Communities in Developing their Own Village Marine Conservation Plans

Priority habitats for conservation within the buffer zone will be defined and management programmes will be developed and implemented with the active participation of local communities. There are key plant communities (sea grass beds and mangroves) located outside the Park, but within the reserve boundaries, that are important to supporting globally significant species (turtles, dugongs) and overall levels of biodiversity within the reserve and within the Park itself. This species management programme will be developed and implemented to be complementary to the management plans for the Park, and will focus on community-based management of globally significant biodiversity in hotspots of the Reserve’s buffer zone. GEF and the GoI will share the cost of this activity 50/50. Implementation of a biodiversity hotspot management plan will be demonstrated through a pilot project.

This activity is designed to top-up the existing marine resource management baseline by assisting communities in developing their own village marine conservation plans for key habitats and species in their respective area of the Reserve’s buffer zone. One important lesson learned from conservation initiatives world-wide is that early incentives are often important to catalyse community-based conservation. By building trust and strengthening partnerships at an early stage, carefully designed and executed early incentives packages can have a marked bearing on conservation outcomes. It is proposed that the Trust establish an early incentives regime by creating Marine Conservation Funds (MCFs) as revolving funds, managed by communities for the purposes of financing conservation-related activities at the village level related to biodiversity hotspots. Co-financing would be secured from local communities as a mark of their

commitment to conservation efforts. Such financing will be a conditionality for the establishment of a MCF in any given area. The MCF incentive, in addition to carefully designed alternative livelihood training programmes described under Output 5 are designed catalyze community-based conservation in the GoMBR.

Output 5: Stakeholders Enabled to Apply Sustainable Alternative Livelihoods

Activities under this output are designed to enable stakeholders to adopt sustainable livelihood options in the Reserve area immediately surrounding the Park. Financing of this component will be largely borne by the GoI and UNDP in bolstering the sustainable development baseline, with GEF resources targeted to activities designed to modify existing uses of biodiversity.

5.1 Improve Near-shore Marine Resource Management

The purpose of these activities is to stabilize the catch-effort ratio and re-orient the existing fisheries management program to emphasize sustainable resource use. Over-harvesting of near-shore marine resources and habitat destruction are major threats to the biodiversity of the Reserve. The project will address these threats through the combined efforts of key stakeholder institutions in the area. The CMFRI will develop fisheries production levels/harvest limits based upon the commercial species information that they already are charged with collecting. The FSD will modify its existing fisheries management programme to include emphasis on sustainable marine resource use. In do this, the FSD will conduct inventories of indicator species to provide a baseline for better management decision making. The FSD, in partnership with GEF, will also make enforcement and fishery management activities more proactive, by develop specific rules for specific localities (i.e. what type of equipment is allowed in which areas), and working with FSD staff to cultivate more ownership of the resource on the part of the fishermen themselves.

5.2 Survey and Assessment of Untapped EEZ Resources off the Coast in the Gulf Area.

The near-shore coastal fishery in the GoMBR suffers from conflict between the mechanised and artisan fisherpeople. In a bid to reduce the pressure on the near-shore area by offering alternative fishing grounds to the mechanised fishermen, FSD will undertake an assessment of EEZ fish resources. This information would then play a crucial role in future discussions among the mechanised fisherfolk, the artisan fisherfolk, the FSD and the Trust.

5.3 Improve Existing Government Enforcement Programmes

The project will facilitate the development of cross-authorization agreements between and among relevant government agencies. To this end, the project will strengthen the district level CMAs to ensure coordination and collaboration among government agencies and other stakeholders. For example, currently FD-WW officials cannot pursue coral poachers outside of the Park boundaries because their jurisdiction stops at the park boundary and the FSD's begins. The same is true for FSD officials in FD-WW waters. The strengthened linkages through the Trust under the project will result in the development of cooperative, cross-authorization

between these two agencies. This will include the strengthening of existing laws and policies necessary for biodiversity conservation for the Reserve.

5.4 Strengthen Local Fisher Cooperatives and Establish User Rights Agreements

One of the primary root causes is the lack of an effective property regime for near-shore marine resources. To address this, GoTN's Department of Fisheries, with UNDP support, will enable coastal stakeholders to develop an effective property management regime for coastal marine resources. Near-shore marine resource management will be improved: 1) through the strengthening of local community cooperatives and the establishment of proactive enforcement regimes; and 2) by enabling local stakeholders to establish user rights agreements (URAs). This will be done through consultations among local fisher cooperatives, trawler groups, the FSD, FD-WW and district-level CMAs. These URAs will complement existing government enforcement programmes, laws and policies. The URAs will proscribe spatial and temporal limits for fishing in particular areas and specify a conflict resolution mechanism.

5.5 Assist Communities in Developing Their Own Village Marine Conservation Plans

This activity is designed to top-up the existing marine resource management baseline by assisting by assisting communities in developing their own village marine conservation plans for key habitats and species in their respective area of the Reserve's buffer zone. This will be integrated with species management programmes for the Park.

5.6 Improve Infrastructure in Key Reserve Areas (Feeder Roads, Forests).

RDD will expand its infrastructure support program in the Gulf of Mannar area, working closely with the Trust to identify key areas in need of infrastructure support. These areas should be identified in part by looking at how RDD can most efficaciously support the project's livelihood development efforts underway. Possible ideas are: GoTN co-funding will improve access roads leading to key coastal areas as well as the refrigeration facilities for fishermen and access to markets in four key sites along the coast to support the viability of these new livelihoods. In addition, significant new support will be provided by the GoTN in developing coastal woodlands and agroforests within the GoMBR boundary in areas to be determined in consultation with key stakeholders, including the Trust.

5.7 Operationalize "Eco-technology" Demonstration Programme Comprised of Two Demonstration Components.

An "eco-technology" demonstration programme will be developed and applied in the coastal area of the Reserve. The programme will be comprised of two demonstration components and will target the users of marine resources. One of the demonstration components will train the artisan and mechanized fisher communities on the sustainable use of marine resources, which includes substitutional, less harmful, more biodiversity friendly trawling practices. GEF will support a long-term outreach programme will be implemented to demonstrate less harmful, more sustainable trawling techniques.

The second demonstration activity will target coral reef miners and female harvesters of wild seaweed. The activity will demonstrate and provide training in mariculture (seaweed farming, pearl culture, eel and mussel culture) and the cooperative marketing of marine products. CMFRI already develops these kinds of technologies, so their ongoing programs, re-focused to support the project's activities, will provide co-financing to this activity. The GEF increment of this component lies in demonstrating biodiversity friendly mariculture practices.

UNDP will support the provision of technical and instructional expertise that will be so important to teaching people mariculture and cooperative marketing aspects. The main thrust of the UNDP sub-programme is to establish self-help groups at the grassroots and strengthen their livelihood base. Technology demonstration, training, knowledge sharing and financial intermediation will be used in realizing the broad objective. Long-term support for extending the lessons learned from these activities will be secured from Government sources.

Another critical component of the UNDP sub-programme which has policy implications is the creation of a user-controlled Information Technology (IT) system at the grassroots level. Given that knowledge is power, it is planned to empower grassroot women's groups and assetless families with IT skills and capacity for knowledge creation in areas such as marketing, use of production technologies, and early warning systems for plant/animal health or natural events. These Village Knowledge Centres will also provide the local community, information regarding their entitlements as well as ongoing government programmes.

In addition, a re-focused SWD programme will support these demonstration activities by providing basic help for the poorest of the poor in the GoMBR area by promoting sustainable livelihoods. This activity should be done in close coordination with the project's eco-technology activities.

The sub-programme along with this project, is likely to contribute the emergence of a new framework for participatory management of biosphere reserves.

5.8 Operationalize Micro-Credit Programme for Local Stakeholders in the Reserve Area

Co-financing will support the development of a micro-credit programme to provide marine resource users with access to capital in helping them to adopt sustainable alternative livelihoods. There are institutions and private lenders that currently provide credit in this area. However, this activity will top-up these efforts establishing a non-profit micro-credit programme to provide micro-credit at extremely reasonable rates to stakeholders developing sustainable livelihoods.

The UNDP sub-programme will provide and leverage micro-capital assistance for the land based initiatives. The micro-capital would be given to cohesive village organisations having strong management capacity with a focus on equity. The capital would be provided only when there is community contribution. The groups would be assisted to prepare the investment plans for the use of micro-capital. The plans for the individual and the collective activities would undergo a feasibility assessment by the implementing agency. This will be followed by the

preparation of terms of partnership which will bring on record the responsibilities of the village organisations and those of support organisations. The credit will be used a revolving fund. The livelihood system will be further strengthened through attempts to enhance the capacity of educational and health support system.

Resource Mobilisation in the UNDP Sub-Programme

From the Members of the Groups: Primarily the resources required for initiating the savings and credit activities in groups would be mobilised by the members as their regular contributions in the form of savings. Also, a part of the requirement on rehabilitation grants will be mobilised from the farmers themselves as their contribution by way of cash, labour and kind.

From the Local and Apex Banks: Building strong linkages between peoples organisations and mainstream banking system such as commercial banks and apex banks. The programme funds required for the promotion of livelihoods would be primarily mobilised as loans through linkages. As part of the linkages groups will be linked with local commercial banks while cluster and federations would forge alliances with apex banks.

From the DRDA and Government: The District Rural Development Agencies of the two districts namely Ramanathapuram and Tuticorin would be involved in the sub-programme. They would be requested to fund the programmes related to natural resources development such as tank rehabilitation programmes. Their ongoing programmes would be used for the purpose. Necessary arrangements would be negotiated with the DRDAs and the district panchayats.

Also the modified programmes aiming at developing the village entrepreneurs such as Swarna Jayanti Gram Swarozgar Yojana (SGSY) would be involved to the full extent to fund the credit groups. This will be the major source of funding for the programmes related to business and entrepreneurial promotions as an alternative livelihood programme. In addition all developmental funds available with the district administration would be used by groups and their federations.

Activities by Output

Output 1: Establishment of Trust, Project Co-ordination Unit (PCU) and Long-term Financial Mechanism

- 1.1 Establish statutory Trust with oversight powers,
- 1.2 Establish PCU and panchayat-Village Marine Conservation Councils;
- 1.3 Develop detailed workplan.
- 1.4 Conduct “Step 1” feasibility study of criteria for the establishment of a LTFM per GEF Evaluation of Conservation Trust Funds.
- 1.5 Submit study report for review of Government and GEF
- 1.6 Develop partnership/co-funding alliances. Make available US\$2 million in co-financing to secure GEF \$500,000 contribution.
- 1.7 Independent review of the effectiveness of the Trust.

- 1.8 Strengthen the Trust statute.
- 1.9 Secure final US\$2,500,000 for LTFM.
- 1.10 Project sustainability review/ study in the 6th year

Output 2: Strengthened Operational Management Programme for Park

- 2.1 Conduct training for managers/community reps
- 2.2 Develop and implement habitat restoration programmes.
- 2.3 Form biodiversity conservation corps to do this.
- 2.4 Develop and implement species management programmes.
- 2.5 Strengthen key legal and policy measures.
- 2.6 Confer protected area status on Park.
- 2.7 Confer protected status on coral species.
- 2.8 Train staff/community reps in community-based management.
- 2.9 Identify “problem” groups/hold consultations, and develop enforcement programmes with local community.
- 2.10 Establish framework and guidelines for restorative ecotourism development.
- 2.11 Develop reference materials for key stakeholders (government, panchayat, industry, coops, NGOs).
- 2.12 Develop curriculum for schools/teacher training.
- 2.13 Develop innovative traditional cultural programs and promote intensive media campaign (TV, radio, internet, newspaper, magazines).
- 2.14 Cultivate participation of local leaders and religious figures.
- 2.15 Establish 10 Marine Conservation Corps.

Output 3: Strengthened Park Infrastructure.

- 3.1 Negotiate zoning agreement/management plan with local communities.
- 3.2 Demarcate boundaries.
- 3.3 Undertake building and equipment improvements necessary for effective, sustainable management.
- 3.4 Conduct training in use of equipment/facilities.

Output 4: An Effective Biodiversity Conservation Programme for the Reserve Buffer Zone

- 4.1 Establish administrative arrangements, information management system, etc.
- 4.2 Organise training for CMA staff and integrate CMA activities and Park management actions.
- 4.3 Develop BR framework management plan – (ICZM – Zoning, Policy, Institutions, etc.)
- 4.4 Establish/strengthen inter-sectoral co-ordination mechanisms (e.g. institutional arrangements among (CMA, FSD, FD-WW, TNPCP, etc).
- 4.5 Conduct training in economic evaluation of biodiversity, and integrated biodiversity management.
- 4.6 Meetings, field trips, inspection tours.
- 4.7 Develop policy guidelines.
- 4.8 Establish environmental baseline (H₂O, species, communities).
- 4.9 Establish biodiversity management parameters and ecological community baseline
- 4.10 Meetings, field trips, inspection tours.

- 4.11 Develop policy guidelines for integrated biodiversity conservation and coastal zone management.
- 4.12 Establish environmental baseline (H₂O, species, communities).
- 4.13 Establish biodiversity management parameters and ecological community baseline.
- 4.14 Develop water quality management parameters/baseline.
- 4.15 Develop village marine conservation plans for identified biodiversity hotspots.
- 4.16 Establish Marine Conservation Funds in pilot villages to support implementation of marine conservation plans.
- 4.17 Develop recovery plan for dugong (aerial surveys, habitat quantification and description).
- 4.18 Develop management plan for sea turtles (surveys, priority habitat/nesting beaches, etc).
- 4.19 Strengthen the existing GIS/information management system in the region.
- 4.20 Develop database in consultation with co-operating government agencies and NGOs.
- 4.21 Strengthen the TNPCB office in Tuticorin to improve monitoring of pollution.
- 4.22 Establish links among CMA, BR, TNPCB, and industry.
- 4.23 Demonstrate the implementation of a biodiversity management plan through a pilot project.

Output 5: Sustainable Livelihood Development Support for Local Stakeholders

- 5.1 Establish fisheries production levels/harvest limits.
- 5.2 Survey and Assessment of untapped EEZ.
- 5.3 Capacity building for fisheries management.
- 5.4 Modification of fisheries policies by FSD to emphasise sustainable use of fisheries
- 5.5 Study tours for CMA, Fishing Department officials and, fishing cooperative leaders.
- 5.6 Strengthen local fishermen co-operatives/provide training on existing laws and regulations.
- 5.7 Develop user rights agreements on spatial and temporal limits to fishing and conflict resolution mechanism (agreed adjudicator).
- 5.8 Develop specific rules as per local conditions (i.e. type of prevalent equipment, ecological conditions).
- 5.9 Clearly define user groups (who is “motorised” and who is “traditional”).
- 5.10 Skill improvement and information empowerment for local resource users.
- 5.11 Establish enabling micro-credit programme.
- 5.12 Plant more coastal woodland areas and agro-forests.
- 5.13 Improve infrastructure: build 2 new docking/refrigeration facilities, improve 2 key access roads.
- 5.14 Improve sewage treatment at two village-sites.
- 5.15 Demonstrate sustainable fishing techniques.
- 5.16 Demonstrate sustainable mariculture.
- 5.17 Establish mariculture co-operatives; develop co-operative processing and marketing.
- 5.18 Provide entrepreneurial training/value addition.

Table 1: Project Execution Responsibilities

Institutions	Trust/PCU*	FD-WW	FSD	DoEF	MSSRF	Panchayat	NGO/Private Sector
Outputs							
Output 1	X	X	X	X	X	X	X
Output 2	X	X	X	X	X	X	
Output 3	X	X					
Output 4	X		X	X		X	X
Output 5	X	X	X	X	X	X	X

Note: “X” indicates responsibility for implementation of the related activity.

* The Trust will be the statutory authority responsible for the development and implementation of the integrated biodiversity conservation and coastal zone management plan. The PCU will be responsible for carry out project implementation activities under the Trust. The Trust will co-ordinate the implementation of the plan by government agencies and other actors.

D. RISKS

The assumptions underlying project design are detailed in the logical framework matrix. The risks involved with this project are that one or more of the assumptions underlying the project’s design may prove to be inaccurate. However, one of the benefits of utilising the logical framework approach is that it requires the project developer(s) to cross-check assumptions with activities and ensure that both are reasonable. Therefore, none of the risks below are considered to be of sufficient magnitude to jeopardise project’s success and do not outweigh the potential benefits of the project.

Risk reduction in conservation and sustainable use activities has been a key consideration in the design of the project, from the management structure to the strategic approach, to the integration of best practices. Lessons learned from other projects have been brought to bear on the design of this project. Careful attention has been paid to other similar integrated conservation and development projects in India (e.g., the GEF Eco-development project and coastal zone management projects in Argentina, Belize, Cuba and Dominican Republic). Best practice reviews have also been consulted⁶.

a. Description of risk: Reluctance on the part of government decision makers at the national and provincial levels to follow through on innovative applications of policies or development of new policies. Estimated probability: Low. Estimate based on the fact that government has committed to making the necessary complementary changes in support of the project (i.e., the establishment of the Trust as a government statutory body responsible for co-ordinating development actions in the project area and the strengthening of key institutions like the CMAs).

⁶ de Fontaubert, A. Charlotte, et. al. 1996. *Biodiversity in the Seas: Implementing the CBD in Marine and Coastal Habitats*, IUCN. Washington, D.C. USA. and

Nakashima, S. 1997. *Integrated Coastal Management as Best Practice in GEF Project Development: Lessons from Biodiversity Projects in Marine, Coastal and Freshwater Ecosystems*, Unpublished. UNDP-GEF, New York, New York, USA.

This commitment is evidenced by the numerous SC meetings held during the Block B and the Government's endorsement of this project and substantial cost sharing. Possible corrective measures: Continue close dialogue with policy-makers during implementation, and provide technical assistance to further develop an enabling policy and regulatory framework for innovative conservation.

b. Description of risk: The Government may change at any or all levels, resulting in a change in commitment to project objectives. Estimated probability: Low. This estimate based upon the fact that this project has been seen from its inception as being a non-partisan, win-win project. In addition, the Trust's Board of Trustees will be chosen in large part on the member's ability to secure strong support from civil society for successful project implementation. Possible corrective measures: Schedule regular meetings of the SC and maintain regular communications between executing and implementing agencies, including all project partners.

c. Description of Risk: Intra-community conflicts may prevent application of the cluster-level management concept, with communities failing to agree on joint management objectives. Estimated Probability: Medium. The project will work in areas where social mobilisation efforts have already been undertaken. It supports the cluster-level initiatives of other agencies, including AKRSP, strengthening already established linkages between communities. The willingness of communities to effect joint management will be a pre-condition of their inclusion within Conservancy areas. Consultations have already been undertaken with communities under the PRIF phase to determine their receptivity to such arrangements. Possible preventative/corrective measures: Train project staff and village leaders in conflict resolution techniques and be vigilant to social processes and responses.

d. Description of risk: Local communities will not accept and respect the boundaries of the conservation areas and the limits imposed on biological resource extraction. Estimated probability: Low. Consultations undertaken during the Block B with local communities indicate that there is widespread support for the strengthening of conservation measures if they are developed in a participatory manner and enforced on an equitable basis. Possible preventative/corrective measures: 1) Maintain open lines of communication between the communities, the Government institutions and the Trust. This will be assured at all project levels, from local community representation on the Trust to a participatory protected area management programme involving local community councils, and a sustainable development programme tailored to removing the root causes of biodiversity loss by assisting local communities. 2) Provide incentives for accepting these changes. A second key incentive for community participation in conservation is the offer of usufruct fishery rights allocation— which will give them a greater degree of control over the use and management of marine resources. This will enable them to regulate access to marine areas by outsiders, capture benefit from enabling controlled access, and capture additional value from productive uses of resources. 3) Education activities will add an additional dimension to the conservation equation. Many communities have come to realise that injudicious natural resource use can have adverse implications for the livelihoods and survival. The involvement of religious leaders in awareness programmes will add a moral dimension to conservation work, drawing on the conservation focused Hindu and Islamic teachings to enhance management.

e. Description of risk: Partner agencies in Government may fail to provide supporting investments for execution of the alternative strategy, leaving implementation gaps. Estimated probability: Low. Extensive consultations have been undertaken with partner agencies and a strong commitment to the project is in evidence. Partner agencies will be accorded a voice in the project by being represented the Trust Board of Trustees and indeed by Chairing the Board of Trustees. A Memorandum of Understanding will be signed between the implementing agent and partner agencies, clearly stipulating mutual obligations. Possible corrective measures: Continue dialogue and integrate field activities during the implementation stage.

f. Description of Risk: Local stakeholders will not change resource-use practices in order to enable biodiversity conservation. Estimated probability: Low. Consultations with and surveys of local communities have shown a high level of willingness to change resource-use practices if people are enabled to choose and implement a workable alternative. Possible corrective/preventative measures: Continue ongoing dialogue with trainees and implement an open, dynamic, learn-as-you-go approach to running the alternative livelihood development workshops.

g. Description of risk: Efforts to involve women in project activities may be resisted by communities, resulting in gender bias and an insufficient focus being given to the needs and priorities of women. Estimated probability: Medium. The project will provide gender training to field staff, so improving their sensitivity to gender issues. The ongoing interactive feedback and communications process that will be invoked will provide project managers with avenues to stem gender conflict at an early stage. The awareness component will sensitise villagers to the importance of involving women in conservation efforts. Possible corrective measures: Focus activities initially in those areas where gender relations support women's involvement in planning and management and where actively functioning women's organisations exist. The success of such efforts may in turn serve as a catalyst for work in other areas.

h. Description of risk: The absorptive capacity of government agencies and NGOs to implement the project is inadequate. Estimated probability: Low. Project implementation would be facilitated through a government-NGO partnership. Training opportunities to enhance the capacity of project staff have been incorporated into project design. Communities are well organised in most of the project area. When compared with other development initiatives in the area, this project represents a relatively modest investment. Possible corrective measures: Apply demand rather than supply based approach to training; regularly review training needs; undertake joint programming with a view to maximising complementarity between this project and associated initiatives.

i. Description of risk: Biological species and communities will not be able to measurably recover in the short-term. Estimated probability: Medium. Project success is not dependent upon an unrealistic expectation of measurable improvement in, for example seagrass beds, within a matter of 2-3 years. The project is designed instead to establish the legal, institutional, social, and economic environment where this kind of recovery can happen steadily over the course of the project and beyond. Possible corrective measures: Recovery/conservation actions will be conducted in an open/transparent fashion with the input of independent ecologists and scientists

from all over the world. This will ensure that the species and ecological community conservation best practices will be applied to the GoM's biological resources.

E. RELATIONSHIP WITH OTHER ON-GOING GEF AND RELATED INITIATIVES

This project benefits from a review of GEF experience and best practices in integrated coastal zone management (Nakashima, 1997). Government multi-sectoral co-ordination and enforcement bodies were found to be a strategic component of coastal biodiversity projects. A lengthy and sustained process was found to be necessary to achieve biodiversity conservation using an integrated management framework. Experience in Argentina, Belize, Black Sea, Lake Tanganyika and Jordan demonstrate that development of integrated management policy and its acceptance does not occur quickly. In most cases, the projects must establish a sustainable institutional mechanism, with strong government commitment, for integrated management and conservation of biodiversity. To meet this objective, they must provide technical expertise for issue identification, biodiversity assessments, environmental surveys, public awareness building, training, legal and institutional analysis, GIS and databases, and the supervisory focus for managing all these activities. Lessons learned suggest that a two-track approach be used to build capacity at the national policy level (regulations and institutions) while at the same time integrating implementation activities at the local and community level.

The Trust will have responsibility for monitoring and evaluating the scope and content of all project activities, taking into account lessons learned in the implementation of GEF and other similar projects in India.

The GEF eco-development project is working to strengthen the management of seven protected areas in India. None have anything to do with coastal areas, and therefore no overlap exists in the area of interest. However, a substantial amount of positive overlap will be encouraged in that this project will work actively with the eco-development project to incorporate lessons learned from that effort. The management of the aquatic region as the extension of the terrestrial system is very significant in development.

The Andaman and Nicobar Islands PDF B project funded by GEF will be developing a proposal to sustainably manage the coral reefs and mangroves of the area, thousands of kilometres from the Gulf of Mannar. The species composition of the Andaman and Nicobar Islands is closer to that of Southeast Asia than the subcontinent.

Currently, FAO is implementing the Bay of Bengal Programme -- a regional project dealing with the commercial marine fisheries sector. Public outreach lessons and programmes from this project will be utilised in the development and institution of the project. A mangrove rehabilitation forestry project funded by the India-Canada Environment Facility (ICEF) was recently approved for implementation in the Picchavarum Mangrove protected area in northern Tamil Nadu, 330 km north of the Gulf of Mannar. This will complement the project in the realm of institutional strengthening and overall strategic, participatory approach.

The project will maintain a two-way synergy with all of these initiatives.

F. PRIOR OBLIGATIONS AND PREREQUISITES

F.1 Prior Obligations

There are no prior obligations.

F.2 Prerequisites

The DoEF, Tamil Nadu in consultation with the Ministry of Environment and Forests and UNDP will set up the Gulf of Mannar Biosphere Reserve Trust GoMBR and will also establish a Board of Trustees. The Board of Trustees will also serve as the project's "steering committee" under the chairmanship of the Chief Secretary or a senior functionary of the State Government to guide the implementation of the project. The Department of Environment and Forests, Government of Tamil Nadu will provide services of a senior level officer to function as the Trust Director. The Ministry of Environment and Forests and Department of Economic Affairs will nominate suitable officers for the board of trustees/steering committee for co-ordination and linkages at the national level. It would also be the responsibility of the MoEF and DoEF and other line ministries at State and National level to make available relevant data and necessary support to the project team as may be required for the successful implementation of the project. The participating line ministries at the state/national level will designate nodal points within respective collaborating agencies/organisations who will participate full-time during the duration of the project.

G. FINANCIAL AND ACCOUNTING ARRANGEMENTS

The financial reporting, accounting arrangements and auditing procedures will be as per UNDP Procedures for National Execution of GEF projects and extant procedures of the Government.

H. PROJECT REVIEW, REPORTING AND EVALUATION

The project will be executed according to the Government procedures and UNDP Procedures for National Execution.

The project will be subject to a review by representatives of the Government (DEA and MoEF), the implementing agency and UNDP as follows:

- Initial review to coincide with the project inception workshop.
- Annual Project Review/TriPartite Review (minimum 1x year)
- A final report on the project to coincide with the final project steering committee meeting at the end of the project.

This project integrates a comprehensive monitoring and evaluation programme. An information baseline on ecosystem structure and function and sustainable use will be established during the first year of the project in order to provide a basis for future monitoring and evaluation. Project

progress will be monitored by: 1) measuring the populations of native, priority species, including indicator species; 2) conducting ecological surveys within the protected area to determine specific health and extent of key habitats; 3) measuring the quality of the processes (e.g., water quality); and 4) surveying the impacts on the livelihoods and participation of local communities and of their level of support for conservation efforts. Please see Annex 2a on the log frame for additional information.

The Trust/PCU will be responsible for developing analytical and sampling tools for monitoring. Institutional capacities will also be monitored, in particular as to their implementing role under the Trust. The Trust will have responsibility for monitoring and evaluating the scope and content of all project activities, taking into account lessons learned in the implementation of the World Bank-GEF “Eco-development” project in India. In addition, the project will conform to standard UNDP procedures for monitoring and evaluation. Every six months, the PCU will present progress reports to the Trust to inform decision-making.

Outcomes will be evaluated by measuring indicators of ecosystem health and function as well as sustainable use. Three external evaluations are scheduled, one in year two, one in year four and a final review just near the end of the project. The external evaluators/ experts will be selected in consultation with MoEF, GoTN, and UNDP following all relevant GoI guidelines. These independent evaluations of project performance will match project progress against pre-determined success indicators. In addition, annual participatory evaluation exercises will be undertaken with key stakeholders, including local communities, NGOs, and partner organizations. UNDP will report on project performance to the GEF at the annual Project Implementation Review (PIR). The project will document the lessons learned, and make it available to stakeholders over the world-wide web.

Sound methods for resolving conflicts, improved management of protected areas, and strong institutions for the planning and management of coastal zone development activities, and clear legal mandates are important in order to successfully integrate the activities of diverse sectors. The Trust will play an important enabling role in this regard, and based upon experienced to date, will arrange for a sustainable source of funding to continue its work. This is based on the expectation that when the project ends, the host country will embrace the new management paradigm, adopt its policies, recommendations and staff expertise and provide the necessary funding to carry on. Overall, an adaptive management approach will be employed by the Trust to feed lessons learned back into the framework management plan for the Reserve, making it dynamic and continuously improving the integration of biodiversity conservation principles.

Lessons Learned: The lessons learned during the implementation of the project will be documented and disseminated to professionals and decision-makers working in India and South Asia and other regions where marine biosphere reserves may be appropriate. The Government of India sees this project as an important model for other Biosphere Reserves that are both already operational (e.g., Sundarbans Biosphere Reserve and Great Nicobar) and proposed (e.g., Lakshadweep Islands and Little Rann of Kutch). The Government has developed a Biosphere Reserve programme that is based upon UNESCO’s guidelines and concept of biosphere reserves. Although not participating at this time, the Government of India see this project as a means of facilitating and capacitating them towards appropriate biosphere reserve management. The

results of monitoring and evaluation exercises will be made available by UNDP to interested parties in line with GEF's policy on information-sharing.

I. LEGAL CONTEXT

The Government executing agent designated on the cover page of this project document has been duly delegated by the Government co-ordinating authority, the Department of Economic Affairs, Ministry of Finance, to carry out this project and accordingly will follow the accounting, financial reporting and auditing procedures set forth in the following document as may be amended by UNDP/GoI from time to time.

- a) UNDP Procedures for National Execution.
- b) Extant procedures of the Government.
- c) Standard annex to sub-programme/project documents for use in countries, which are not party to the Standard Basic Assistance Agreement (SBAA).

The above documents are an integral part of this project document although incorporated herein only by reference. They have already been provided to the Government and the said Executing Agent.

The executing agency and implementing agency shall, at all times, ensure compliance with NEX guidelines and also comply with requirements contained in the UNDP Procedures for National Execution (April 1998) to the extent they do not conflict with the said NEX guidelines or extant rules and provisions of GoI.

The following types of revisions may be made to this project document with the signature of the UNDP Resident Representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

- Revision in, or addition of, any of the annexes of the project document (with the exception of the standard legal text for non-SBAA countries which may not be altered and agreement to which is a pre-condition for UNDP assistance (See Annex 13)
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and
- Mandatory annual revisions, which re-phase the delivery of agreed, project inputs or other costs due to inflation or take into account agency expenditure flexibility.

Auditors to the project will be officially designated. Such auditor, and/or other officially appointed auditors shall undertake annual management and financial audit of the project in accordance with UNDP auditing procedures for nationally executed projects, pursuant to the Government of India's overall national execution responsibilities under the project document and as set out in the documents listed above.

In addition, all accounts maintained by the Government for UNDP resources may be audited by the UNDP internal auditors and/or the United Nations Board of Auditors or by public accountants designated by the United Nations Board of Auditors.

J. SPECIAL FEATURES

Chance for replicability within India and in the region

Tamil Nadu is the first state in India to begin development of a state-wide ICZM plan and has recently established CMAs at the district level to ensure that coastal zone regulations minimizing pollution and restricting development are followed. As a result, the MoEF is planning to use this project's coastal planning work as a model for integrating biodiversity in future ICZM initiatives in India's other eight coastal states.

The people and institutions involved with this effort will be directly involved in the project. Several of these same institutions and individuals will be involved in the subsequent development of ICZM plans for the other eight coastal states. This effort will not only develop and implement an innovative sustainable management regime for a marine biosphere reserve, but it will also provide valuable and substantive input to the on-going process of ICZM plan development for all of India.

Innovative Features

This project be the first initiative in India to develop a multi-sectoral, management and conservation programme for a part of India's coastline. In so doing, it will establish innovative partnerships among the Government sector, the non-government sector, the private sector, and village-level stakeholders. A neutral entity will be established to develop and oversee conservation and development activities within coastal area where the project will be working. No other Trust of this type has ever been created in India.

Cost-Effectiveness

This project is designed from top-down (Government) and bottom-up (community participation) to be cost-effective and produce project outputs for the least amount of money possible. GEF's Block B investment has leveraged substantial co-financing to meet the sustainable development baseline. The demonstration programme under this project is a means to cost-effectiveness in that it will demonstrate long-term sustainability of biodiversity conservation and marine resource management in and beyond the Reserve when replicated. Initiatives established under this project will be appropriate to the abilities of key players to sustain them over the long-term. The project will also establish cost-effective partnerships among key stakeholders, spreading responsibilities for addressing conservation needs among a range of actors. In addition, the participatory approach is cost-effective in that it will engender greater stakeholder "ownership" of conservation efforts, improving the chances of successful outcomes.

Sustainability

Limitations in India would rule-out any long-term support of an expensive coastal biodiversity conservation programme. This project has therefore been designed in order to maximize the

long-term institutional and financial sustainability of project-inspired activities. Existing institutions will be strengthened and used to implement most of the project's activities. Institutional sustainability will be ensured through capacity building of key stakeholder groups (government departments, village institutions, and NGOs) by strengthening their conservation capacity. Only the role of Reserve management will be filled by a new institution to be established by the GoTN: the GoMBR Trust.

Over the life of the project, partnerships among government, NGOs, the private sector, and local communities will be established to sustain integrated conservation efforts in the long-term. The project will employ a sustainable approach for the development of sustainable livelihoods by providing training through a demonstration programme comprised of two components and empowering local resource users to effectively access micro-credit support. Sound and practical methods for resolving conflicts, improved planning and management of protected areas, and strong institutions and human resources for the planning and management of coastal zone development activities are also important. Legal mandates must be clear in order to successfully integrate the activities of diverse sectors. The Trust will play an important facilitating role in these two areas. By the end of the project, the regular FSD, TNPCB, and CMA budgets would absorb the sustainable development baseline costs. The Trust will, as part of the project, work with government and other donors, and in particular the private sector, to mobilize resources to finance sustainable alternative livelihood options. The recurrent cost of biodiversity conservation activities is presently estimated at US\$ 300,000 per year, representing an additional US\$ 200,000 to the existing US\$ 100,000 per year (approximately provided by the Government). These costs will be absorbed by the LTFM to be capitalized with at least US\$5 million during the life of the project. The LTFM would thereby ensure the sustainability of project outputs.

K. BUDGET

See Annex 1a for UNDP-GEF project budget and 1b for an overview of co-funding inputs.

List of Annexes

- Annex 1a: UNDP-GEF Budget Contribution
- Annex 1b: Summary of GEF & Co-Funding Inputs
- Annex 2a: Project Planning Matrix/ Logical Framework
- Annex 2b: Sequencing Of Outputs over Project Life
- Annex 2c: Overall Operational Plan for 1st Year
- *Annex 3a: Terms Of Reference – Staff (To be finalised at prodoc signature)
- *Annex 3b: Terms of Reference – Contracts (To be finalised at prodoc signature)
- Annex 4: Financial Mechanism
- Annex 5: GoMBR Trust Description
- Annex 6: Public Participation Plan
- Annex 7: Equipment List
- Annex 8: Incremental Cost Assessment
- Annex 9: Analysis of Threats and Proposed Actions
- Annex 10: Project Implementation Arrangements/Institutional Summary
Figure 1: Institutional Linkages
- Annex 11: Schedule of Project Reviews, Reporting, and External Evaluation
- Annex 12: Map of the Gulf of Mannar
- Annex 13: Standard Annex to sub-programme/project documents for use in countries, which are not party to the Standard Basic Assistance Agreement (SBAA).

