

**UNITED NATIONS DEVELOPMENT PROGRAMME
PROJECT OF THE GOVERNMENT OF INDIA
Project Document**

Sub-programme Budget Number: IND/03/040/01/99

Sub-programme Title: Strengthening sustainable livelihoods for biodiversity conservation in Sundarbans

Sub-programme Short Title: Sustainable livelihoods and biodiversity conservation in Sundarbans

Estimated start date: 20 August 2003

Estimated End Date: 31 August 2006

Executing Agent: Ministry of Environment & Forests, Government of India

Implementing Agent(s): Forest Department of Govt. of West Bengal and partner NGOs, CBOs and PRIs.

Sub-programme Sites: Sundarbans in 24 Parganas South & North Districts, West Bengal

Programme Support Title: Sustainable Environment & Energy Division

Classification Information:

ACC sector & sub-sector: Natural resources.	Primary type of intervention: Direct support.
Primary of Area Focus: Promoting sustainability of the environment and natural resources.	DCAS sector & sub-sector: Sustainable livelihoods of local communities and biodiversity conservation.
Primary target beneficiaries: Biodiversity especially of the mangrove forest and wetlands and sustainable livelihoods for the local poor human populations.	Secondary target beneficiaries: Policy environment, planning and donor funding.

Brief Description: The Sundarbans delta area with the waters draining into the Bay of Bengal is a unique 10,000 sq.km. natural resource shared both by Bangladesh and India (60:40). Sundarban National Park in India was declared as a World Heritage site in 1987 and the entire Sundarbans Reserved Forest in India was declared as a Global Biosphere Reserve in 2001. It is home to the world's largest continuous mangrove forest, and a huge diversity of aquatic and terrestrial, plant and animal species, many of them facing the threat of extinction. This project seeks to: a) explore, assess and test sustainable and gender sensitive livelihood options and alternatives for the primary threat to the biodiversity of Sundarbans in India: a rapidly growing low-income and dense human population of about 4.1 million pressing on the boundaries of the Reserved Forest; b) to up date and collate comprehensive information on the Sundarbans; c) to raise public awareness, and; d) to formulate a long-term Strategic and Perspective Plan that will attract substantial additional funding for successful conservation of its biodiversity and improved living standards for the local people.

<u>On behalf of:</u>	<u>Signature</u>	<u>Date</u>	<u>Name/Title</u>
Government	_____	_____	Mr. P.K. Deb, Joint Secretary, Department of Economic Affairs
Executing Agency	_____	_____	Mr. D.D. Verma, Joint Secretary, Ministry of Environment & Forests
UNDP	_____	_____	Mr. Maurice Dewulf, UNDP Resident Representative a.i.

United Nations official rate of exchange on the date of last signature of Sub-Programme Document: US\$ 1 = Rs.45.77

A. COUNTRY PROGRAMME CONTEXT

I. Background

The Tenth Five-year Plan proposes “a shift in the focus of planning from merely resources to the policy, procedural and institutional changes which are essential for every Indian to realise his or her potential”. This resonates with the overarching goals of the work of the United Nations system in India – to work towards the promotion of sustainable human development and the elimination of human poverty and inequalities – as well as the global mandate of United Nations Development Programme (UNDP) to establish ‘partnerships to fight poverty’. The Government of India (GoI)-UNDP Country Programme for 2003 to 2007 is aligned with these priorities, and is a reflection of the recognition that international co-operation can play a significant role in supporting GoI in addressing these issues.

With an average growth rate in the gross domestic product of 5.8 per cent during the first decade of reforms (1992-2001), India is among the 10 fastest growing economies in the world. India’s steady progress over the last decade towards meeting the goals of human development is reflected in the improvement of the country’s Human Development Index (HDI) from 0.406 in 1975 to 0.571 in 1999. Yet the challenges for human development remain formidable¹. Statistics on critical development indicators such as female literacy, life expectancy at birth, child mortality and incomes show that regional and interstate disparities are increasing². There is growing public consensus on the need for proactive measures to tackle the situation of disadvantaged and vulnerable groups. The pressures on environmental and natural resources and the repercussions of their degradation on low-income livelihoods have become a source of increasing concern. In the context of rapid strides in decentralisation, there is an urgent need to strengthen the capacity of organs of local governance-rural and urban, as also to make public administration more efficient, open and accountable to the public.

Development co-operation in India is also being increasingly premised on human development goals and targets outlined by the Planning Commission, Government of India, in the 10th Five-Year Plan. Most of these are related to and are more ambitious than the Millennium Development Goals. The targets that can be monitored for the 10th plan and beyond are outlined below:³

- Reduction of poverty ratio by 5 percentage points by 2007 and by 15 percentage points by 2012;
- Providing gainful and high-quality employment to the labour force over the Tenth Plan period;
- All children in school by 2003; all children to complete 5 years of schooling by 2007;
- Reduction in gender gaps in literacy and wage rates by at least 50 per cent by 2007;
- Reduction in the decadal rate of population growth between 2001 and 2011 to 16.2 per cent;
- Increase in Literacy Rates to 75 per cent within the Tenth Plan period (2002-3 to 2006-7);
- Reduction of Infant mortality rate (IMR) to 45 per 1000 live births by 2007 and to 28 by 2012;
- Reduction of Maternal Mortality Ratio (MMR) to 2 per 1000 live births by 2007 and to 1 by 2012;
- Increase in forest and tree cover to 25 per cent by 2007 and 33 per cent by 2012;
- All villages to have sustained access to potable drinking water within the Plan period;
- Cleaning of all major polluted rivers by 2007 and other notified stretches by 2012.
- Reduction of Infant mortality rate (IMR) to 45 per 1000 live births by 2007 and to 28 by 2012;
- Reduction of Maternal Mortality Ratio (MMR) to 2 per 1000 live births by 2007 and to 1 by 2012;

¹ <http://planningcommission.nic.in/appdraft.pdf>

² [http://www.un.org.in/CCA2.htm#The state of human development](http://www.un.org.in/CCA2.htm#The%20state%20of%20human%20development)

³ Tenth Five Year Plan, Planning Commission, Government of India, Vol. 1, Chapt. 1, p. 6.

II. The Country Programme (2003-07) and its Thematic Focus

The United Nations Development Assistance Framework (UNDAF), which is the document expressing the agreement on programme priorities between the United Nations System in India and the Government of India, has as its main focus the promotion of gender equality and the strengthening of decentralisation⁴. These two themes form the underlying thrust of the new Country Programme (2003-2007) and interventions as reflected in the following four inter-linked thematic areas:

Themes for the Country Programme (2003-2007)

<p>Promotion of human development and gender equality</p>	<p>In India, the state human development reports (SHDRs) have been a successful vehicle for promoting the concept of human development as a valid basis for development planning. It is now proposed to build on the credibility and experience-base established through the first CCF to create an interface at the state level between economic policy and social concerns such as gender equality, poverty eradication and people's participation. Strategies proposed include: partnerships with research institutions, civil society organisations and individual experts to support state governments in facilitating integration of social concerns; providing conceptual and methodological support to the process of engendering development; strengthening the state HDR process to make it more consultative and broad-based and; strengthening the involvement in the HDR process of various tiers of the Government and diverse stakeholders, including other members of the United Nations system and bilateral donors.</p>
<p>Capacity-building for decentralisation</p>	<p>Given the cross-cutting focus on decentralisation, strategies proposed include: Capacity-building of panchayati raj institutions (PRIs) in both rural and urban areas; continued support to civil service reform at various levels, with a focus on gender sensitivity, responsiveness, transparency and efficiency of administration; capacity-building for district and village-level planning; facilitating an enabling environment for integration of people living with HIV/AIDS through capacity-building of communities, civil society groups, voluntary organisations and local institutions; research on legal/ethical issues and building new partnerships, particularly with the Indian private sector.</p>
<p>Poverty eradication and sustainable livelihoods</p>	<p>This programme will intensify efforts piloted during the first CCF to facilitate action on human poverty and ensure their sustainability by rooting them within local institutions and mainstream government programmes. Strategies proposed include: strengthening partnerships between PRIs, women's groups, civil society organisations and government agencies to develop, test and disseminate innovative, gender-equitable and community-managed approaches to sustainable livelihoods and environmentally sustainable natural resource management; piloting and testing gender-responsive models of support for traditional artisan communities; supporting production of status reports on poverty in India and; evolving a coordinated strategy to share Indian best practice with other developing countries and accessing lessons from international experience.</p>
<p>Vulnerability reduction and environmental sustainability</p>	<p>This programme will comprise activities designed to reduce the vulnerability of communities to natural disasters and environmental degradation. Proposed strategies include: strengthening state-and regional-level systems for establishment of disaster-preparedness plans and systems for early warning and recovery; developing community capacities to plan and implement gender-equitable disaster-mitigation strategies and post-disaster reconstruction/sustainable recovery; strengthening national capacities for influencing global debates on environment and mainstreaming global environmental concerns (e.g., biodiversity areas, renewable energy, land degradation, desertification, climate change) into national projects, programmes and policies and; demonstrating technologies and approaches, to address linkages between global environment issues and national developmental challenges.</p>

⁴ <http://www.un.org.in/UNDAF/undafstatement.pdf>

Based on specific roles for UNDP development co-operation identified through a comprehensive review and stakeholder consultation process, all projects build on the following qualities:

- A perspective 'from below', of low-income households and marginalised communities - rural or urban, in order to strength their self-help and self-reliance capacities through innovative and catalytic, 'action-research' type of interventions.
- A common platform to bring a diverse set of development partners (Government agencies at the Central, State and district levels; PRIs, Non-Governmental Organizations (NGOs) and Community Based Organisations (CBOs), and; other UN system and bilateral donor partners) together to devise innovative solutions to development challenges.
- Emphasis on addressing the multi-sectoral dimensions of development programming and when possible, integrating programming at selected geographical locations/districts.
- Comprehensive monitoring and documentation of development innovations from proven success stories and effective pilot initiatives, and dissemination of lessons of value for policy-makers with regard to the design and implementation of much larger public sector schemes.

The new Country Programme reflects a continued commitment to national direction and ownership. Partnerships with government agencies and civil society partners initiated under the first Country Cooperation Framework (CCF- I, 1997-2002) will be vigorously pursued and alliances with the Indian corporate sector and the voluntary sector built to draw on their experience and expertise.

B. PROJECT BACKGROUND

I. The Development Context

The Sundarbans ecosystem is a unique natural wonder of South Asia and the world⁵. Straddling the border between India and Bangladesh, Sundarbans is the largest remaining contiguous block of mangrove ecosystem in the world, with a total area of approximately 10,000 square kilometers. Mangrove ecosystems are amongst the most fragile and currently they are highly endangered all over the world due to various human actions including deforestation, changes in their hydrology due to building of dams and canals, and pollution. The Sundarbans Reserved Forest in Bangladesh and India comprises approximately 60 per cent and 40 per cent of the total area respectively and sprawls across the ancient delta of three great rivers the Ganges, Brahmaputra and Meghna along the Bay of Bengal. This area has developed over time with the changing dynamics of the delta development process and comprises of islands, creeks and waterways. Sundarbans is special in its biodiversity and host to many hundreds of endangered species of plants and animals of which the tiger is the most reputed. The Indian and Bangladesh portions of Sundarbans have received national and international acknowledgement for high biodiversity value. Sundarban National Park in India has been declared as a World Heritage Site in 1987 and the entire Sundarbans region in India was declared as a Global Biosphere Reserve by UNESCO in December 2001 and the Sundarbans Reserved Forest in India is now in the process of being declared as a Ramsar Site. Sundarbans of Bangladesh was declared as a Ramsar Site in December 1993 and part of Bangladesh Sundarbans was also nominated as a World Heritage Site in December 1997.

India has further accorded national conservation importance to Sundarbans in the form of Protected Areas. There are three Wildlife Sanctuaries and one National Park namely Sajnekhali Wildlife Sanctuary (362 sq.km), Lothian Wildlife Sanctuary (38 sq.km), Haliday Wildlife Sanctuary (6 sq.km) and Sundarbans National Park (1330 sq.km). A part of Sundarbans has also been designated as a Tiger Reserve under Project Tiger of Gol (2585 sq.km) and the National Park forms the Core Zone of the Tiger Reserve as well as the World Heritage Site.

⁵ Refer "Sunderban Biosphere Reserve – An Overview. Published by Sunderban Biosphere Reserve, January 2003.

This vital coastal wetland is home to one of the largest surviving wild population of the endangered Indian tiger and a number of other threatened species of plants and animals. The Sundarbans mangrove forest is very rich in biological diversity, and supports 334 species of plants, and as many as 400 species of fishes, 8 species of amphibians, 53 species of reptiles, 315 species of birds and 49 species of mammals. Indian tiger, Gangetic and Irrawady dolphin, estuarine crocodile and river terrapin are all globally endangered species found in the Sundarbans. This is the only mangrove forest remaining in the world with *Sundari* tree (*Heritiera fomes*) as the dominant species and is also home to a number of endemic plant and animal species. The significance of this unique ecosystem is greatly felt due to its unique biota and the fact that it is the source of a multiple resource base for the economy of local communities. The bio-resources of Sundarbans form the basis of livelihood of tens of thousands of people. Sundarbans also offers tourism and recreation benefits, and is a major pathway for nutrient cycling and pollution abatement, apart from playing a crucial role by providing a protective barrier which helps in buffering the impacts of cyclones from the Bay of Bengal on human settlements that lie at the apex of the delta including the city of Kolkata.

Sundarbans is also one of the poorest, most densely populated regions of South Asia and the world, with an estimated 8 million people directly dependent on its fragile ecosystem (both in India and in Bangladesh). It is this population pressure and the resultant human impacts that have halved the mangrove forest cover over the last two centuries, south of the Dampier-Hodges Line (which demarcates the Sundarbans ecosystem as determined by the daily tidal movements in the delta). A large number of communities spend substantial portions of their lives inside the Sundarbans ecosystem in boats. The Indian Sundarbans, lying south of Dampier-Hodges Line, comprises thirteen blocks in 24 Parganas South District and 6 blocks in 24 Parganas North District and has a total population of 4.1 million as per 2001 census. Dependence of fringe population on Sundarbans Reserved Forest resources is high, and the main users comprise: (i) fisherfolk; (ii) *Bowalis* (wood cutters/*Golpatta* collectors); (iii) crab and shell collectors; (iv) *Mowalis* (honey collectors); and (v) shrimp fry collectors, consisting mainly of women, girls and boys.

44 percent of the total population in Sundarbans belongs to Scheduled Castes and Scheduled Tribes. 85 percent of people living in Indian Sundarbans are dependent on agriculture on reclaimed land, which bear mostly single crop of paddy. Landless agricultural labourers and marginal farmers constitute about 90 percent of the total cultivators in the area. Out of the landless families (50% of the population), about 15 percent of these do not even have homestead land⁶. Besides agriculture, other occupations are fishing as well as pisciculture, honey collection and woodcutting. Women occupy a significant proportion of fishing communities and are mainly involved in river-based fishing for collection of small prawn, while children are involved in sorting and drying of fish. Given the loss of biodiversity and resource degradation in Sundarbans and lack of access to employment opportunities, the livelihoods of the fishing community, wage labourers including agricultural labourers, women and child workers have been most adversely affected⁶.

The level of literacy as well as per capita income is much lower in Sundarbans than in other parts of India and most of the people in Sundarbans fall below the poverty line. The communication and transport network is also very poor and most of the areas are inaccessible. Communication in this area, which is dissected by a network of numerous rivers, streams, channels and creeks, is mainly through crude, mechanised boats and a limited number of launches sailing through these water courses. Access to health services is extremely poor and electricity is almost non-existent.

⁶ Food and Livelihood Security of the Poor and Marginalised People of Sundarbans in West Bengal – A Perspective Paper by Action Aid, West Bengal. 2003.

Traditional user practices (e.g., seasonality of harvesting, gender roles, awareness of the need for regeneration) have largely broken down due to increased poverty and population pressure, lack of effective protection, lack of trust between the government departments and the local community and a perceived lack of viable alternatives. The unsustainability of many current livelihood activities, and the lack of access to productive resources on fair terms, lead directly to the destruction and depletion of the Sundarbans ecosystem and to continuing poverty and inequity. It is vital that all stakeholders should be involved and enthused to contribute to the conservation of the Sundarbans ecosystem.

II. Issues to be Addressed⁷

Sundarbans, the last remaining great estuarine wetland and mangrove forest of the world, used to be managed under semi-natural conditions for numerous decades. Unfortunately, over the years due to a variety of reasons, about one half of this unique forested ecosystem area has now been lost to intensive agriculture. A variety of complex factors threaten the biodiversity and ecosystem of Sundarbans. Clearly the dominant factor is the unsustainable exploitation of limited forest, fresh-water and fisheries resources by the burgeoning human population, a result of policies encouraging, or deliberately not controlling, human migration to Sundarbans during the colonial period and subsequent decades. Many species, ranging from the tiger to the tiger prawn, have been the specific target of poachers and commercial greed. Human interventions upstream, from deforestation and dams, industrial effluents to large-scale prawn cultivation and trawling as well as launch-based tourism, have reduced fresh water flows into the delta and its flushing action and increased pollution levels manifold. At the same time, given the fact that the people of the area are desperately poor, the conditions of their survival primitive, and the level of public infrastructure and investment very limited, unless alternative livelihoods and improved living conditions can turn their attention away from the resources in the Reserved Forest, a conservation policy based on policing and sanctions has no chance of succeeding.

Overexploitation

Overexploitation of the resources - from legal and illegal harvesting of mangrove trees for building materials and for boat building and fuel wood to honey collection, and intensive harvesting of aquatic resources, is the major threat to biodiversity conservation in Sundarbans. There is, however, at present, a partial moratorium on exploitation of certain species of flora in the Sundarbans, including stoppage of legal harvesting of timber and fuel wood.

Poaching of wildlife

Many species of wildlife like tiger, fishing cat, water monitor lizard, Gangetic and Irrawady dolphin, porpoise, adjutant stork, shark, salt water crocodile, river terrapin and Olive Ridley sea turtle have become endangered in Sundarbans due to habitat destruction and changes, increased salinity, anthropogenic stress and illegal trade in wildlife products. Horseshoe crab, a living fossil, is one such example. National and international gangs of poachers take advantage of the long and common international boundary, low-level presence of law enforcement authorities and remoteness of the area, for poaching.

Uncontrolled fishing and shrimp fry collection

Aquatic resources are among the least studied biological resources. However, over 120 species of fish are caught regularly. In addition, there are at least 7 species of shellfish and molluscs, which are used for the production of super quality lime. Over fishing and overexploitation of aquatic resources

⁷ The issues highlighted in this section is based on existing studies on Sundarbans (referred to in this document), field visits to the region and discussions with a variety of stakeholders.

are also placing increasing stress on the functioning of the ecosystem. Significant overexploitation has occurred in recent years, resulting from a rapid expansion of seasonal in-migration for fisheries, and increased use of non-sustainable practices including shrimp fry collection.

Comprehensive and reliable data on fisheries resource harvest from Sundarbans is also lacking. Moreover; unscientific fishing practices including non-usage of Turtle Excluder Device (TED) by the trawlers cause damage to the fishery stock and sea turtle population. Gangs of international and national poachers' take advantage of the long international border along the eastern boundary of Indian Sundarbans where implementation of vigilance and regulations is difficult due to the nature of the habitat and its remoteness. Baseline assessments of biological resources of the marine and estuarine areas are urgently required to integrate this data into conservation planning of the Sundarbans ecosystem. Scientifically based sustainability criteria for managing the Sundarbans ecosystem are also lacking.

Habitat degradation

Due to shift in the fresh water flow from the Hooghly river system into Padma river, major fresh water rivers like Matla and Bidyadhari have got cut off from their fresh water sources and are now mostly tidal rivers. As a result, less of fresh water flushing of the mangroves take place during low tide. This results in an increase in the salinity level in the waters of the western part of Sundarbans. This is inducing changes in the vegetation pattern and island formation in the delta. Construction of barrages in the upper catchment areas and embankments around the habitations have further reduced silt flow into the estuary and affected the delta formation activities. Further, widespread land poldering, and deforestation have reduced natural drainage and flushing, and resulted in increased siltation. Results of recent siltation are evident from the shift of international shipping from Kolkata port to sites further downstream.

Pollution

Expansion of upstream agriculture and intensive shrimp-based aquaculture, and industries located on the Hoogly river system, and pollution from municipal wastes from urban and port development, pose serious threats to the ecosystem. Introduction of a large number of mechanised boats for fishing, tourism and transportation also has the potential for chronic oil spillage and sound pollution. Runoff drainage from agricultural fields with agrochemicals and untreated urban and industrial effluents also pose a grave threat to the health of this ecosystem. Though Indian Sundarbans has been declared as a "No Plastic" and "No Noise Pollution" zone, yet the awareness regarding and enforcement of laws and regulations against pollution is very rudimentary.

Loss of ecological integrity

The Sundarbans ecosystem used to support a number of plant and animal species, which have been exterminated from the ecosystem in the recent past due to habitat degradation or human exploitation. The name Sundarbans is derived from the tree *Sundari* but presently the habitat and populations of this species are declining rapidly. This species is under severe threat apparently due to increased salinity. Forty-six wildlife species indigenous to Sundarbans are endangered (2 species of amphibians, 14 species of reptiles, 25 species of birds, and 5 species of mammals). The local extinction of a few important mammal species like rhino and swamp deer has been reported in the past century. This entire phenomenon is indicative of the degradation and loss of ecosystem integrity. Cross border poaching and changes in hydrology in the upstream areas significantly impact the integrity and functioning of the ecosystem.

Threats to livelihoods of local communities

As mentioned earlier, Sundarbans is home to many poor communities who are largely migrant and landless. Apart from external threats such as cyclones, floods and sea level rise, premature and ill-

planned establishment of settlements, rapid population growth and absence of industries and local employment opportunities along with habitat destruction, due to a variety of factors discussed above, are creating more demand on the natural resources (fisheries, water, forests, agricultural soil and land) already under stress and threatening the livelihoods of the already marginalised communities and particularly women, who play an important role in ensuring household livelihood security. In the absence of both personal and social security and due to the breakdown of traditional practices, the natural resource base on which the people depend for their livelihood, is being overexploited and suffering further degradation. Further, as per the technical assistance study being conducted by ADB⁸ the given resource base of Sundarbans, it is not easy to expand or intensify agriculture, with the result that both food security and jobs are increasingly becoming an important issue of concern. Moreover, the key assets on which the poor depend for livelihood, apart from natural resources i.e., human, social and physical capital, are also inadequate. Low education levels, chronic health problems (due to environment, ignorance and poor access), excess labour, a low skill base, lack of access to official credit, low savings, under employment, high dependence on government and poor infrastructure (housing, roads, embankments, ponds, waterways, marketing, electricity and communication) are indicators of a poor livelihood asset base in the region.

Given this livelihood context, the ADB technical assistance study also identifies the following livelihood outcomes that the poor of Sundarbans are seeking: (a) physical security and reduced vulnerability; (b) improved food and nutrition security; (c) greater and more consistent income; (d) increased family well being; (e) improved physical assets; (f) a long-term adequate natural resource base; (g) protection of rights; (e) dignity and justice.

Micro-level experiences of involving local communities including women in biodiversity conservation and natural resource management for sustainable livelihoods have yielded positive results in this area but have yet to be replicated on a large enough scale.

III. Indicators of National Priority

The recent launch of the Tenth Five Year Plan (2002-2007) enables the establishment of links between the programme components of this project and the development imperatives and initiatives outlined in the Tenth Five Year Plan (DRAFT Volume II Sectoral policies and programmes, Planning Commission, Gol, New Delhi). Government programmes in the area of biodiversity conservation and sustainable livelihoods with reference to Sundarbans include the creation of Protected Areas, ecodevelopment, Joint Forest Management, establishment of the Biosphere Reserve, special programmes for the conservation of mangroves and wetlands, designation of Sundarbans as a Ramsar and World Heritage Site, and establishment of the Tiger Reserve.

The thrust areas of the Tenth Plan in the field of sustainable development of natural resources, which have relevance to this project includes the following:

- Conservation and utilisation of biological resources through participatory management
- Development of coastal regions
- Rainwater harvesting and conservation for the development of rain-fed areas

The Tenth Plan document also refers to the need for proper management of fragile ecosystems like mangrove and coastal areas to safeguard the livelihood of millions of people apart from the

⁸ ADB's Technical Assistance Programme: 3784 – IND "Conservation and Livelihood Improvement in the Indian Sundarbans". Study findings and analysis shared at a workshop organised by the Sundarbans Development Board at Kolkatta on 29 April 2003. Final study report expected by July 2003.

ecological benefits they bring. Amongst the strategies outlined is the following - The national development agenda must recognise the necessity of protecting the long-term ecological security of the country. Assigning conservation a high priority both at the central and state levels should be the objective of all development programmes. Growth alone cannot combat poverty effectively. Further the Plan recognises that a broader livelihood approach, covering productive capacity, institutional and legal structures, market access and tenure, must be adopted that puts forests in the broader context of rural development. Initiatives required include making rainwater harvesting and water conservation the focus of development planning, preventing the overexploitation of coastal resources, strengthening of fisheries databases and conservation of wild and endangered species and their habitat. High priority also needs to be given to the control of poaching and illegal trade in wild animal and plant species. With specific reference to Project Tiger, there is a need to place emphasis on anti-poaching camps, mobile squads, capacity building of frontline staff in intelligence gathering, detection and successful prosecution of cases and providing necessary infrastructure to them. Rural development has, all along, failed to take into account the strong linkages between conservation of forest and wilderness areas and the sustainable welfare of people dependent on them. This needs to change and ecodevelopment activities should be further strengthened to reduce pressure on forests.

The new Tourism Policy 2002, envisages involving the rural sector in the promotion of rural, heritage, adventure and ecotourism and will promote the development of high quality products and destinations. Sundarbans has been identified as a priority wildlife tourism destination. It is mentioned that efforts will be initiated for the preparation of site and visitor management plans and quality of tourist facilities will be enhanced. The possible negative impacts of tourism on conservation efforts, women, and asset base of especially the poorer and vulnerable sections of resident communities will be taken into account while developing these plans.

IV. Lessons Learnt from Previous Programmes

The strategies adopted by the West Bengal Forest department in the past focused on providing protection to the mangrove forest ecosystem through legal and administrative measures. However, with the limited infrastructural and communication facilities, as available within the governmental set up, and in the face of mounting biotic pressure due to burgeoning population, the government's effort to preserve the ecosystem has failed on many counts. It became evident that efforts to preserve the mangrove forest and its biodiversity, in isolation from its surroundings, cannot be successful. This led to the concept of "Biosphere Reserve approach" where the role of people in the conservation effort was duly recognised. Based on this concept, a number of schemes have been initiated with Government of India funding as well as Government of West Bengal's Plan funds. With the initiation of the " Joint Forest Management " support activities and "Eco-development" activities, the barrier between the governmental staff and the people has been partially overcome and the field-level Forest Department personnel are beginning to earn the trust and confidence of the local people. This has facilitated the process of implementation of conservation measures. It has also turned out that the creation of ecologically sustainable alternate livelihood options have made the forest fringe people less dependent on the forest resources for their sustenance and this ultimately helps in the conservation effort.

However, in the absence of a committed long-term project, with matching fund support to sustain the activities at the desired level, the efforts for biodiversity conservation in Sundarbans may fail to achieve the desired result. The existing schemes of the government departments and other

institutions and NGOs⁹, although critical and important, are too limited to bridge the gap between the current initiatives and the field requirements.

V. Reasons for UNDP's Development Cooperation

This project fits in very well with the areas of work outlined under UNDP's CCF-II namely (a) Poverty eradication and sustainable livelihoods and (b) Vulnerability reduction and environmental sustainability. Biodiversity and environmental conservation are major concerns for UNDP and stem from the realisation that human welfare is definitely based on the conservation and proper functioning of the natural environment. Biodiversity conservation has extremely strong links to poverty alleviation and sustainable human development in a remote and underdeveloped but biologically rich area like Sundarbans. This is also in line with UNDP's past as well as present work in the field of pro-poor community based natural resource management initiatives through the Ministry of Rural Development and in the field of environment, especially national level programmes on conservation of biodiversity and medicinal plants through the Ministry of Environment and Forest, Government of India and Global Environment Facility. UNDP has also given a commitment to the Government of West Bengal regarding work in the Sundarbans, which will lead to sustainable development in the area and also result in the conservation of its biodiversity.

Given the external threats to Sundarbans, particularly cyclones and floods, the Vulnerability Reduction and Environmental Sustainability division at UNDP is currently supporting a National Disaster Risk Management (DRM) Programme "Community Based Disaster Reduction and Recovery Through Participation of Communities and Local Self Governments" in 12 states including West Bengal. This programme supports national capacity building to institutionalise the system for natural disaster risk management in Ministry of Home Affairs; environment building, education, awareness programmes and strengthening capacities at all levels in natural disaster risk management; multi-hazard preparedness, response and mitigation plans for disaster risk management at state, district, block, village and ward level in 125 most multi-hazard prone districts of 12 selected states and; networking knowledge on effective approaches, methods and tools for disaster risk management, developing and promoting policy frameworks at State and National levels.

C. THE PROJECT

I. Project Context

Ideally, the Sundarbans should be managed as a single resource across the international boundaries of India and Bangladesh. For the last two years, there has been broad agreement by the two countries for a joint development initiative, for which there are ongoing efforts to bring together various funding sources like the United Nations Fund (UNF), the Global Environmental Facility (GEF), and the Asian Development Bank (ADB). This will take some time, during which further imbalances and destruction are likely to take place. Indeed, the ADB has already begun its investment activities on the Bangladesh side, while only a project preparation phase (under Technical Assistance Programme) is in operation in West Bengal. This project reflects the urgency of undertaking comprehensive testing and planning for the West Bengal side, for which the Government of India is willing to commit some of its core UNDP resources. Over a three-year period, this project

⁹ For a comprehensive overview on ongoing government schemes and the work of NGOs in Sundarbans, refer "Status Report on Conservation and Management of Biodiversity of Indian Sundarbans". Prepared by Environment Management Department, Indian Institute of Social Welfare & Business Management, Kolkatta.

should have established a solid basis for a much larger development programme, making use of focused research, training, public awareness-raising and, above all, field-testing of a number of livelihood initiatives.

II. Project Strategy

The overall objective of this project is to develop institutional space and a platform for sustainable development and biodiversity conservation for the Sundarbans ecosystem on the basis of an ecosystem management plan with the participation of all stakeholders. The main purpose of this project is to test out a combination of initiatives that will together constitute a long-term strategy for the sustainable development of the Sundarbans ecosystem, including conservation of its biodiversity, with the active collaboration of the surrounding population and the public support of the State of West Bengal.

The mangrove Reserved Forest in Indian Sundarbans is some 4,260 sq.km., of which the Sundarbans Tiger Reserve constitutes about 2,600 sq.km., and the rest comes under the 24 Parganas South Forest Division. As much as 45 percent of this area is under water or in an inter-tidal zone of creeks and channels. The dominant responsibility for the conservation of the forests of Indian Sundarbans is undoubtedly that of the West Bengal Forest Department. Yet its activities of protection with limited resources (including inspections, patrolling, surveying, and licensing) cannot succeed without the active support of the surrounding communities, of its sister departments in the West Bengal Government, of the private sector anxious to invest and exploit natural resources, and most of all, of the wider public of Kolkata, West Bengal and India. This larger constituency has to become aware of the true nature of the wealth of Sundarbans and its importance to their future. While the Sundarbans have long entered Bengali folklore and popular religion, myth and culture, the factual and direct knowledge of the Sundarbans remains distant for most people. The fragility and complexity of the Sundarbans ecosystem, and its impact on the weather, on food chains and on their lives, are not properly understood nor a part of their daily awareness. Partnerships have to be established between government departments, NGOs and Panchayats, academic bodies and corporate enterprises, the media and common farmers, fishermen and forest guards.

This project thus needs to make a modest beginning on several fronts at once. First, the information base and understanding of actual problems needs to be strengthened. This includes an in-depth understanding of the dependency patterns of local communities, particularly of women, on the natural resource base as well as of the impact of the growing threat to biodiversity on these livelihoods. Public awareness in the neighbourhood, in Kolkata and elsewhere, needs to rise sharply, leading to a veritable mass movement in favour of Sundarbans conservation. A set of specific initiatives have to be tried in 'buffer' villages around the Reserved Forest, aimed at improving their livelihoods and living conditions without depleting and destroying the natural resources. A long-term (10-year) plan for Sundarbans development needs to be drawn up, which will require a gendered livelihood assessment to gain an understanding of the existing livelihood options, the asset base, social networks and relevant government programmes in the area. This plan should also incorporate a societal vision, rules and limitations, and concrete development programmes and funding priorities that will make for a harmonious match between the ecosystem and the diverse stakeholders. Finally, the project also needs to devote resources to mobilizing additional donor resources, including the negotiation of a programme framework. Close coordination and integration is needed with the ongoing efforts to obtain additional funding from agencies like UNF, ADB and GEF.

The details of the principal activities are:

1. Applied (gap-filling) research and training activities (over 3 years):

Applied research will be an important aspect of the project that will feed into developing a comprehensive ecosystem management plan, which as mentioned earlier, is urgently required for Sundarbans. The West Bengal Forest Department will play the lead role in this work, with the Biosphere Reserve itself being the principal beneficiary. It will draw on the voluntary support of other NGOs, academic institutions in the State, and specialist organizations such as the Wildlife Institute of India and M.S. Swaminathan Research Foundation. The local communities will be consulted throughout these studies to bring their perspective and knowledge into applied research. Collaborative research activities may be taken up in the following fields:

- tiger ecology and behaviour: home range, ranging patterns and diet
- tiger and prey-base census methods
- vegetation surveys and propagation of mangrove species: *Heritiera (Sundari)* and *Xylocarpus*: using soil amendments, tissue culture and biotechnology
- hydrology including changing courses of the major rivers, estimate of underground sweet-water reserves and aquifers, sustainable extraction rates in the buffer area
- also for Sundarbans channel waters: research and monitoring levels and sources of pollution, sedimentation and levels of salinity, including changes over the years
- estimation of fish stocks in Reserved Forest waters and optimum (sustainable) off-take rates by small fishermen as well as trawl-fishing
- artificial propagation, on a commercial scale, of tiger prawn seedlings ('meen'), using methods tried successfully in Kerala and South-east Asia
- high salt-tolerant agricultural and horticultural crops for introduction to populated areas
- full-fledged, Web-based GIS cell for studying and monitoring detailed land-use patterns, ultimately to be used for planning
- study on ecotourism and tourism carrying capacity (e.g. number of visitors, launch traffic, resorts)
- relationship between cyclones, micro-climates and mangrove growth; erosion and tidal action; mega-city pollution, large-scale prawn cultivation and industrial activity upstream
- status survey of avifauna of Indian Sundarbans

2. Establishment of Sundarbans Biosphere Resource and Information Centre:

- Using the land and facilities afforded by the Kolkata Zoological Gardens in Alipore (ex-reptile zone, now available), rehabilitate and redesign buildings to provide a full-fledged Sundarbans Interpretation Centre, for the people of the State and country to become aware of the richness and significance of the Sundarbans ecology, and of its relevance to their lives: tourism information, film and slide projection, audio-visual facilities, interactive computer terminals, in simple terminology, local languages (Bengali and Hindi), and attractive for the general public
- A Biosphere Resource Information Centre, containing: explanatory maps and posters, research material, published studies with a library and conference hall, facilities for lectures and discussions, familiarization and briefing for audiences ranging from school students to politicians and journalists, news-sheets on current developments and a web-site, to be located at Aranya Bhavan
- Material to encourage educational and awareness campaigns in the schools and villages of Sundarbans, 24 Parganas South district areas and panchayats, including setting up mini-exhibition centres, starting with villages where there are functioning Forest Protection / Eco-Development Committees

3. Development initiatives for Alternative Livelihoods and Improved Living Conditions in the Sundarbans Villages:

- Commission a series of micro-level studies covering a range of issues such as: understanding the dependence of local communities and particularly poor women on natural resources for livelihoods and understanding their livelihood asset base (natural, social, financial, physical and human); identifying the threats to these livelihoods and studying the internal and external factors as well as differential impact on the poor and vulnerable groups and on women; documenting and analysing good practices related to community-based and equitable natural resource management with special focus on the knowledge and practices of women in the region such as women' groups involved in fisheries¹⁰; identifying a range of livelihood options that can be strengthened or introduced that promote sustainable utilisation of resources and are sensitive to gender and equity concerns. These studies will be carried out in consultation with NGOs working in the Sundarbans, research institutions and independent consultants with expertise in the region and of the issues.
- Starting with the villages where the Forest Protection Committees (FPCs) and Ecodevelopment Committees (EDCs) have been operating, make an in-depth assessment of the current threats to the Sundarbans Biosphere resources from the settlements in the populated belt of the Sundarbans area (i.e. south of the Dampier-Hodges Line)¹¹. This would include an estimate of the actual number of people both women and men, whose incomes derive and depend significantly on the land or water-based assets of the reserve area, as well as an occupation-based analysis: fisheries, 'meen' collection, logging, poaching, smuggling, tourism and extraction of threatened varieties. This assessment would also look into the links between their local economies and the enterprises or activities based further upstream (Kolkata and beyond), including harmful and destructive impacts.
- In a 5-kilometre zone above the reserved forest boundary (a self-designated "buffer"), identify a number of villages, starting with those with FPCs, where a number of related livelihood and living condition improvement initiatives may be experimented with, in order to make them more self-reliant and conscious of the importance of environmental sustainability. The specific needs of women with respect to access to resources, knowledge, technical decision-making and management skills will be taken into account.
- Given the demanding topography unique to Sundarbans, building community self-reliance in these areas is vital. The use of community volunteers for mobilization, training and group organization should be pursued to the hilt. In agriculture-related work, there is much scope for the introduction of salt-resistant varieties of plants and trees, for animal husbandry, for kitchen gardens and nutritional improvements. The Project will seek to ensure that the participatory processes and institutional arrangements at the local level are sensitive to gender and equity concerns. These initiatives will draw on other GOI-UNDP-supported projects in the country, which will provide training, technical guidance and experimental supplies:

¹⁰ The Department of Fisheries, Government of West Bengal is currently supporting women's groups involved in fisheries.

¹¹ A study by Dr. Shukla Sen "Socio-economic Survey in the Fringe Villages of Sundarban Reserved Forests" commissioned during the preparatory phase of this project (2002) provides useful insights on 15 forest fringe villages.

- through the Primary Education “Janshala” programme of the Government of India, supported by the UN Inter-Agency effort, communities will actively support and lead their own school programme.
- community-based efforts in primary health-care, using the resources of the UNDP-supported Medicinal Plants project with the FRLHT (also under the MoEF) to plant and, use and commercially develop local medicinal plant varieties specific to the Sundarbans region.
- community based initiatives for livelihood security and biodiversity conservation - a project following up on the National Biodiversity Strategy and Action Plan (also under the MoEF)
- expand water-harvesting initiatives using community participation – as pioneered by the Tarun Bharat Sangh (TBS) and other UNDP-supported projects.
- work with the UNDP-supported Creative Manual Skills project in West Bengal in order to expand the scope of craft and other manual skills for subsistence and local markets, including plant and fruit organic cultivation practices adapted to the local environment and aimed at improving basic nutrition levels.
- obtain support from the SWRC (Tilonia) managed UNDP Renewable Energy Project for solar and other technologies to be used for a number of livelihood options; given the isolation of most Sundarbans villages, the Information and Communications project supported by UNDP can bring useful dimensions such as solar-powered Community Radio.
- initiate local-level planning and support with the UNDP Social Mobilisation project of rural development as well as Women in Agriculture programmes, so that the energies of women and youth and the communities as a whole, can lead to equitable and participatory development.
- a major effort has to be made to set ecotourism for the Sundarbans on the right path. This has the potential of becoming the largest income-earner, if handled sensitively, imaginatively, aesthetically and modestly, ensuring that most of the benefits accrue to the buffer communities and to the ecosystem management itself. The GOI-UNDP project on Endogenous Tourism must make the Sundarbans one of its key areas for experimental intervention.
- given the external threats to Sundarbans, particularly cyclones and floods, establish linkages with the UNDP supported National Disaster Risk Management (DRM) Programme “ Community Based Disaster Reduction and Recovery Through Participation of Communities and Local Self Governments” to be implemented in 12 states including West Bengal.

4. Drawing up of a Strategic, 10-year Perspective Plan and Funding Framework for Sundarbans, 2011-12 to 2016-17):

As mentioned earlier, the overall objective of this project is to develop institutional space and a platform for sustainable development and biodiversity conservation for the Sundarbans ecosystem on the basis of an ecosystem management plan with the participation of all stakeholders. The need

to formulate a large-scale development programme (as opposed to only sectoral) that integrates both conservation and livelihood dimensions of the region is gaining recognition at both the governmental and non-governmental level. It is proposed that this project will contribute to development of a strategic perspective plan for 10 years covering the 11th (2006-07 to 2010-11) and the 12th (2011-12 to 2016-17) Five Year Plans. During this project, the detailed plan for Sundarbans will be developed and tested for different interventions. At the end of the project, the learning will feed into the long-term perspective plan. In this context, this project seeks to contribute effectively to the process through the following steps:

- together with the Sundarbans Development Board, the District Magistrates of 24 Parganas South and North, and the State Planning Department, the Forest Department should work with NGOs such as Action Aid, Ramakrishna Mission, Tagore Society; who work closely with local communities and women's groups and research institutions such as the Women's Studies Centre of JadHAVpur University and Indian Institute of Social Welfare and Business Management, to formulate a vision for the future which is based on principles of ecosystem management, focuses both on conservation and livelihoods dimensions and relies as much on people's aspirations as on scientific studies of various carrying capacities (including water reserves, tigers and tourism) identified under the research component. A population and migration policy would be central to the Plan, as would sustainable agricultural and income levels for the whole region. A unique identity for the Sundarbans should emerge, showing the way for ecosystem-based development planning, which must be shared and discussed with civil society in the fullest sense, using the mass media.
- the Plan would be the ideal framework for a comprehensive funding strategy, which should include Central Government, State Government and bilateral donors along with the GEF and ADB. This should also take into account the security dimensions of the Sundarbans position, subject as it has been to piracy, poaching and smuggling over the centuries on such a large scale, and lending itself almost naturally to international terrorist activity.

5. Formulation of a large-scale Development Programme for the Sundarbans:

- as an immediate, or intermediate, output of this project, work has to begin forthwith on identifying components that require the supplementary funding and investment that UNDP cannot meet. These include resources vital to the conservation and protection work of the Forest Department, such as communications and monitoring equipment, speedboats and forest camps, both permanent and mobile. These must be matched by State and Central Government commitments to staff the Reserve with specialized human resources of a magnitude and quality capable of handling the immensity of the area and its demands.
- again, there will be elements of this larger programme that should be managed by other parts of the Government apparatus, along with community and NGO partners. This would include activities such as wider replication of livelihood options tested by this Project, capacity building of local communities, PRIs and local agencies to adapt/implement sustainable natural resource management practices.
- finally, institutional arrangements and mechanisms for operationalising the large scale development programme will need to be outlined based on an assessment of existing and potential capacities of institutions for and in Sundarbans – governmental and non-

governmental, including community-based organisations, self-help groups and Panchayati Raj Institutions.

III. Project Results

Based on the Project Strategy, the matrix below outlines key outcomes, outputs and indicative activities.

Baseline	Target	Outputs	Indicative Activities
Outcome 1: Knowledge base and awareness of key stakeholders on the ecological significance of the Sundarbans mangrove ecosystem enhanced.			
<ul style="list-style-type: none"> • Need for gap filling in research on some key ecological dimensions. • Inadequate awareness among agencies, the public at large and local communities on the ecological significance of Sundarbans. 	<p>Establish reliable baselines of information on the occurrence, distribution, and ecology of important floral and faunal species.</p> <p>Produce publications in Bengali and English with comprehensive and reliable information to use as an advocacy and awareness tool.</p>	<ul style="list-style-type: none"> • Applied research in key areas generates knowledge and/or fills gaps in research on critical issues. • Information on key areas generated for improved understanding and effective educational and awareness campaigns. • Improved access to information generates awareness among key stakeholders, particularly the dependent local communities. • Research findings contribute to design of long-term strategy, programme development and advocacy for the region. 	<ol style="list-style-type: none"> 1. Identification of key stakeholders in defining and carrying out the applied research agenda - West Bengal Forest Department, NGOs, academic institutions including those working on gender issues in the State and specialist organizations such as the Wildlife Institute of India. 2. Finalisation of applied research areas in consultation with key stakeholders covering a range of critical issues. 3. Developing and operationalising a dissemination strategy for wider sharing of research findings. 4. Support establishment of a Sundarbans Biosphere Resource and Information Centre.

Baseline	Target	Outputs	Indicative Activities
Outcome 2: Options and alternatives, that improve the livelihoods of local communities and promote resource conservation and sustainable utilisation, are explored, assessed and tested for wider replication.			
<ul style="list-style-type: none"> • Increasing population pressure on biodiversity and natural resource base for livelihoods. • Unsustainable exploitation of the declining resource base. • Inadequate efforts to explore and promote alternative livelihood options, especially for the dependent communities. 	<p>To arrive at the appropriate combination of activities which will give sustainable livelihood options to the local people.</p>	<ul style="list-style-type: none"> • Livelihood options feasible/ appropriate for the Sundarbans explored, tested and demonstrated with participation by local communities and other relevant agencies. • Best practices that promote resource conservation and sustainable livelihoods for wider replication/dissemination identified. • Documentation of lessons learnt from field testing feed into long-term strategic perspective plan development for the region. 	<ol style="list-style-type: none"> 1. Commission studies on assessment of current threats to Sundarbans, dependency of local communities, particularly of poor women on natural resources and analysis of good practices related to community-based and equitable natural resource management. 2. Undertake feasibility of possible livelihood options/alternatives that promote resource conservation and sustainable resource practices among all socio-economic categories of dependent communities, with specific focus on gender and equity concerns. 3. Initiate at an experimental level, selected livelihood options for field-testing. 4. Identify training needs for local communities particularly women, the forest department and other partner agencies and support appropriate capacity building and training programmes. 5. Support capacity building of field teams for testing and documenting the process and lessons emerging from the field. 6. Establish/facilitate linkages with other GOI-UNDP-supported projects in the country, which will provide training and technical guidance. 7. Support research to identify livelihood options appropriate for wider replication in the region.

Baseline	Target	Outputs	Indicative Activities
Outcome 3: A vision for the future of Sundarbans that relies on people's aspirations as well as on resource conservation principles is formulated and is recognised/accepted by key stakeholders including local communities.			
<ul style="list-style-type: none"> • Ineffective policies to halt degradation. • Need for a holistic strategy/programme that combines resource conservation with local livelihood needs. 	<p>To rationalise and harmonise state government policies and programmes in the Sundarbans, to achieve sustainable development and biodiversity conservation.</p>	<ul style="list-style-type: none"> • Long-term strategic perspective plan, programme and funding framework, based on Project experience and a consultative process, for the Sundarbans (covering 11th & 12th five year plans: 2006-7 to 2016-17) developed. • A large-scale development programme incorporating conservation, livelihood, equity and gender concerns for the Sundarbans formulated. 	<ol style="list-style-type: none"> 1. Support learning and experience sharing forums at different levels to feed into perspective plan development. 2. Organise workshops for development of a perspective plan at different levels (community to state-wide) and involving key stakeholders, particularly the local communities and with adequate reflection of gender and equity concerns. 3. Organise a multi-stakeholder consultation for sharing and finalising the long-term strategic perspective plan for the region. 4. Facilitate donor consultations for finalising a funding framework for the plan.

IV. Sustainability

As mentioned earlier, the Sundarbans is a fragile ecoregion. Population pressures have made great inroads into the livelihood options for the local communities. By providing alternative livelihoods, the project seeks to promote sustainable utilisation of resources. The applied research studies will contribute to the pool of knowledge on better management of the environment thereby enhancing the sustainability of the ecosystem. More general awareness on the vulnerability of the community and the environment will ensure sustained efforts by all stakeholders. This project will also lead to the formulation of a long-term strategy and perspective plan for the sustainable development of the Sundarbans.

V. Equity

The project seeks to empower local communities who are marginalised and living on the edge of survival. Efforts to strengthen livelihood options and access to resources seek to ensure that vulnerable communities and particularly poor women have enhanced access to natural resources. This project will ensure convergence and integration of gender and equity concerns into all assessments, feasibility studies, the long-term perspective plan and government programmes.

VI. Risk Analysis

Risk	Risk Rating	Risk Minimisation Measures
A. Risk of outputs failing to translate into outcomes		
<ul style="list-style-type: none">Government of West Bengal is not interested in formulating a long-term vision for the Sundarbans	Low	Regular meetings with Government to share project learnings and policy implications
<ul style="list-style-type: none">Stakeholder involvement minimal	Low	A formal consultative process put in place ensuring that NGOs and CBOs are also part of the process
B. Risk of outputs not being produced		
<ul style="list-style-type: none">Government of West Bengal unable to fulfil its counterpart obligations	Low	Government of West Bengal has made a commitment at the highest level
<ul style="list-style-type: none">Additional resources for the larger programme not forthcoming	Medium	GoI and GoWB are working closely with the donor community to raise additional resources
<ul style="list-style-type: none">Government does not provide an enabling environment for NGOs and CBOs to develop sustainable field level activities	Low	GoWB has encouraged NGOs in the Sundarbans to assist them with the project. Government order empowers the local FPCs and EDCs in JFM activities.

VII. Partnerships

The project will work in partnership with several stakeholders such as CBOs, NGOs, Government of West Bengal, Government of India, research institutions and the donor community. The strong partnership with the MoEF will ensure mainstreaming of issues related to mangroves to be incorporated into both policy and programmes at the national level. Lessons learnt will be shared with all stakeholders. Opportunities would be provided for project authorities to learn from development initiatives taking place in other parts of the country. This two-way lateral learning will ensure greater visibility to the unique situation prevailing in the Sundarbans.

D. IMPLEMENTATION ARRANGEMENTS AND ROLES & RESPONSIBILITIES OF PROJECT PARTIES

I. Prior Obligations and Pre-requisites

- The Ministry of Environment and Forests, Government of India, will closely monitor the implementation of this project and assist in linking this project with other externally and centrally sponsored projects dealing with wetlands, mangrove and coastal ecosystems.
- The Government of West Bengal will ensure the effective implementation of the project in collaboration with numerous NGOs and academic institutions and will take the leadership and coordinating role.
- The West Bengal Forest Department and especially the staff of the Sundarbans Biosphere Reserve will facilitate in all respects the implementation of this project by all project partners. They will also take the lead in attempting to synergise the efforts of other line departments in Sundarbans.

For the project to function and have its policy impact, a Joint Management Committee under a “primus-inter-pares” chairmanship of the West Bengal Forest Department (with the National Project Coordinator who is the Director of the Sundarbans Biosphere Reserve acting as Member-Secretary) needs to oversee and monitor project implementation. The Joint Management Committee must include at least the Sundarbans Development Board, the Office of the District Magistrates for 24 Parganas South & North, Zila Parishads of concerned districts, Sundarbans Affairs Department, Irrigation, Agriculture, Tourism, Fisheries and Rural Development Departments of the West Bengal state government, a representative of the MoEF, GoI, UNDP, representatives of academic institutions, NGOs and Panchayat representatives. Between them, they can also help to channel the efforts of related state government departments such as Health, Education, Small Industries and Transport. This Committee should meet at least once every six months. NGO partners should play a key role in monitoring and process evaluation, preparing reports for the Committee along with the representatives of the FPCs and communities themselves. The Committee will also approve annual action plans and budgets, monitor and review annual reports, approve selection of consultants, award of sub-contracts, criteria for disbursement of micro-capital support and parameters for baseline survey and performance evaluations.

UNDP assistance will be provided subject to the satisfactory fulfillment of the above pre-requisites. If anticipated fulfillment of one or more pre-requisites fails to materialise, UNDP may, at its discretion, either suspend or terminate its assistance.

II. Implementation Arrangements – Institutional Mechanisms & Monitoring

Government Coordinating Agency: The Department of Economic Affairs (DEA) in the Ministry of Finance, the Government aid coordinating agency will be responsible for the overall coordination of the Country Programme activities. In order to guide and support the Executing Agencies towards meeting the Country Programme goals, DEA will participate in the Project Management Board. DEA will also catalyse consultations on broader development cooperation issues emerging out of different programmes supported by UNDP as well as programmes assisted by other agencies. As a part of its overall mandate of resource mobilisation, DEA in collaboration with the concerned government departments and UNDP will also assist in raising additional resources to support Project objectives.

National Executing Agency: In line with the National Execution Guidelines (July 1998) issued by the Department of Economic Affairs (DEA), Ministry of Finance and the UNDP corporate procedures as outlined in its Programming Manual (May 2000), this project will be executed nationally. The Ministry of Environment and Forests, Government of India will be the Executing Agency for the project, and will be responsible for its overall management including achievement of planned results and for the use of UNDP funds. The main institutional mechanisms for guiding the Project at this level would be the Programme Management Board (PMB) and an Empowered Project Standing Committee.

Programme Management Board (PMB): The PMB will be chaired by Secretary Department of Environment and Forests with representation from DEA, UNDP, Secretary Forests, Government of West Bengal and other partners. The functions of PMB are described below:

- Identifying policy lessons from the project those are replicable to other national initiatives including the need for review of laws, rules and regulations as well as guidelines for major national programmes.
- Linking organically broader human development strategy/ achievements and innovative approaches in multi-sectoral development programming at the grassroots.
- Reviewing progress of the project through participatory mechanisms and based on lessons from below on key indicators such as ownership, participation, equity and empowerment.

Joint Management Committee (JMC): The JMC will be headed by the Principal Secretary/Principal Chief of Conservator of Forests, Government of West Bengal and will have as members the National Project Co-ordinator, and representatives from DEA, MoEF and UNDP. The functions of the Committee are described below:

- Facilitating timely decisions on project management issues such as the approval of the Standing Finance Committee (SFC), budget structure, annual work-plans,

financial management including advance of funds, implementation issues and audit follow-up.

- Exploring opportunities for flexible management, in tune with the ongoing rationalisation in governmental procedures and the fast-evolving UNDP reforms initiative will be fully harnessed.
- Implementing the monitoring, evaluation and research strategy. Particularly ensuring that participatory monitoring and evaluation (PME) at the grassroots is the base on which the overall M & E superstructure is built.
- Assessing development outcomes vis-à-vis the planned targets.
- Identifying policy lessons from the Project that are replicable to other national initiatives including the need for review of laws, rules and regulations as well as guidelines for major national programmes.
- Linking organically broader human development strategy/ achievements and innovative approaches in multi-sectoral development programming at the grassroots.

State-level Implementation Arrangements: The implementation arrangements for the Project under CCF-II are as follows:

The Forest Department, Government of West Bengal will be the Implementing Agency and will be responsible for the day-to-day management and operation of the Project.

The State Department of Forest will appoint a Project Co-ordinator, the Director of Sundarbans Biosphere Reserve, who will facilitate the implementation from the government side. The Project Co-ordinator will report to Secretary, Forests, Government of West Bengal.

UNDP Collaboration: UNDP will support management of the project and towards this participate in various project committees. UNDP will support drawing and up scaling of development lessons. At the request of the Executing/Implementing Agency, UNDP will also provide support (termed as UNDP Country Office support services) for sub-contracting and for monitoring and evaluation. Country Office support may be provided in other areas also as agreed between UNDP and the Executing Agency/Implementing Agency. Such support activities will be carried out in accordance with UNDP rules and regulations.

III. Funds Flow Arrangements and Financial Management

As per the GoI-NEX Guidelines, the Union Ministry of Environment and Forests, the Executing Agency, shall make suitable provision for UNDP funds in its annual budget. At the request of the Executing Agency, UNDP will make direct payments to the Implementing Agency and other implementing partners and suitable accounting entry will be made in the budget of the Ministry and the Controller of Aid, Accounts and Audit to reflect receipt of such funds by GoI. UNDP will release funds only on receipt of utilisation certificates from the Implementing Agencies.

The Implementing Agency and participating NGOs shall maintain a separate bank account in order to receive and disburse UNDP funds. Separate books of accounts on cash basis of accounting shall also be maintained in order to ensure accurate reporting of expenditure and providing a clear audit trail. In all cases, fund transfers will be on the basis of MoUs/contracts between the National Project Co-ordinator and the NGOs. The

terms and conditions of all MoUs/sub-contracts will be discussed and approved by the Joint Management Committee.

Requests for release of funds by UNDP will be made by the National Project Co-ordinator through the MoEF as per the UNDP Financial Report Format. The Financial Report will contain, in addition to the information on funds required, information on annual budget, year-to-year expenditure and available budget.

The Project Co-ordinator will send an annual work plan and budget to the Joint Management Committee and the MoEF. Upon receiving written authorisation from the Executing Agency, UNDP will release funds in advance every three months, based on this annual work-plan. The Project Co-ordinator will report disbursement to the MoEF and UNDP on a quarterly basis, in the Financial Report Format referred to earlier.

IV. Audit

As per the Gol NEX Guidelines, the project shall be subject to audit in accordance with UNDP procedures. In order to meet the UNDP requirement of covering 90% of the annual NEX expenditure under audit, an annual audit plan will be drawn up in consultation with DEA. The project shall be informed of the audit requirements by January of the following year. The audit covering annual calendar-year expenditure will focus on the following parameters: (a) financial accounting, documenting and reporting; (b) monitoring, evaluation and reporting; (c) use and control of non-expendable reporting; and (d) UNDP Country Office support.

The auditor shall be appointed in consultation with DEA. In line with the UN Audit Board requirements for submitting the final audit reports by 30th April, the auditors will undertake field visits during February/March. Detailed instructions on audit will be circulated by UNDP separately.

E. MONITORING & EVALUATION, RESEARCH, COMMUNICATIONS & ADVOCACY

I. Monitoring and Evaluation

The different committees as discussed above, will monitor the progress of the project. The PMB & JMC will give an emphasis to reviewing the activities of the project in a more holistic manner. A monitoring framework will be developed in consultation with the implementing partners at the beginning of the project that enables tracking the progress of the project for its objectives and achievement of outputs as per the success indicators mentioned in the proposal document as well as ensures a closer examination of substantive issues of the Project. Efforts will be made to particularly track the impact of project interventions on the natural resource base as well as on the livelihoods of vulnerable households and poor women. In terms of processes, the Project will encourage the use of participatory and engendered processes of monitoring and learning such as peer reviews, self-evaluation, social and development audit, event track, and group feedback. A baseline study with gender-disaggregated data will be commissioned for the project area.

In general, UNDP is trying to practice Outcome Evaluation. This entails assessment of a cluster of projects instead of a single project in order to evaluate relevance, performance

and success in the broader context of agreed outcomes. The PMB and JMC will be guided by this approach in their decisions regarding the evaluation of the project.

II. Research Agenda

Given the development context, the Project has the potential to contribute significantly to a better understanding of the complex ecology and the serious conservation issues confronting mangrove forests, wetlands and coastal habitats in general and Sundarbans in particular. The planned interventions in creating alternative and more sustainable livelihoods for the local communities provide plenty of scope for innovations. These interventions will be regularly monitored and well documented so as to ensure an objective evaluation as well as the documentation of the best practices. It is crucial to support a rigorous study and analysis of the Project that can be shared widely. Such studies could focus on the impact of the Project on the sustainable livelihoods and the status of biodiversity in the Sundarbans.

The research agenda will be developed by the JMC in consultation with UNDP and all other the partners during the early stages of the Project, along with developing the overall plan for communication and advocacy. The findings of the research studies will be shared with partners from time to time and ways of using these to improve field practice and advocacy at different levels will be regularly explored. These studies will be undertaken in collaboration with the research institutions and NGOs.

III. Communication and Advocacy, Lessons Learned, and Upscaling

One of the major objectives of this project is the establishment of the Sundarbans Biosphere Resource and Information Centre. This will be a very focused attempt to communicate to the public about the wonderful biodiversity of the Sundarbans and its conservation status, the threats facing the biodiversity and the ecosystem and the role people can play to ensure its conservation.

A concrete action plan will be developed at the beginning of the Project along with budgetary outlays, to document and disseminate best practices for greater cross learning between project partners as well as for wider learning. The roles of different agencies – NGOs, West Bengal State Forest Department, Gol UNDP and Research Institutions - will be defined and the work plans will reflect the different activities related to documentation (e.g. commissioning case studies, process documentation, issue-based studies, reviews, working papers) and wider dissemination through publications, inputs into web sites, monographs and multi-mass media coverage on a regular basis.

The Project will encourage effective communication that covers information gathering and sharing documentation with all Project partners. It will encourage documentation of baseline as well as key milestones during the Project period through use of video and print media; coverage of key events, processes and outputs by journalists and others; training of Project partners in communication tools and skills; success stories with a strong human element and; linkages, wherever possible, with communication staff of the government at district/block levels. It will proactively support design and creation of mechanisms such as workshops to share and review experiences and lessons learnt at different levels within the Project as well as implications for programme and policy formulation.

The Project will encourage monitoring and evaluation of project processes and outcomes jointly with policy makers, implementing groups and subject specialists. The Project will facilitate the travel of independent journalists to see the work in the field. It will provide funds to local partners to video document the process in the field.

F. PROJECT BUDGET

UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT BUDGET (US \$)

IND/03/040/01/99 - Strengthening Sustainable Livelihoods for biodiversity conservation in Sundarbans

The exact budgetary allocation for each specific activity will be made within the first six months of the project. This will be based on discussions with local communities and project partners. Broadly, the expenditure priorities of the project may be seen from the following figures for each major category of activities:

Applied Research and Training	20%
Biosphere Information & Interpretation Centre	20%
Human Threats and Livelihood Initiatives	55%
Strategic Perspective Plan & Financial Framework	3%
Formulation of Large-Scale Development Programme	2%
TOTAL	100%

G. LEGAL CONTEXT

This project document shall be the instrument envisaged in the Supplemental Provisions to the Project Document attached hereto.

The following types of revisions may be made to this 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.

- Revisions in, or addition of, any of the Annexes of the project document (with the exception of a Standard Legal Text for non-SBAA countries which may not be altered and agreement to which is a pre-condition for UNDP assistance);
- Revisions which do not involve significant changes in the immediate objectives, outputs of activities of the Project but are caused by the re-arrangements of inputs already agreed to or by cost increases due to inflation; and
- Mandatory annual revisions, which rephrase the delivery of, agreed project inputs or increased experts or other costs due to inflation.

The Executing Agency and Implementing Agency shall, at all times, ensure compliance with the NEX Guidelines annexed hereto and also comply with the requirements contained in the UNDP Programming Manual to the extent they do not conflict with the said NEX Guidelines or extant rules and provisions of Government of India.