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HONDURAS

CONSOLIDATION OF ECOSYSTEM MANAGEMENT & BIODIVERSITY CONSERVATION OF THE BAY ISLANDS, HONDURAS

(TC-03-05-00-0)

PLAN OF OPERATIONS

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For basic socioeconomic data, including public debt information, please refer to the following address:

http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata

INFORMATION AVAILABLE IN THE FILES OF RE2

PREPARATION:

EXECUTION:

ABBREVIATIONS

EIA	Environmental Impact Assessment
ESMP	Environmental and Social Management Proposal
GEF	Global Environmental Facility
GIP	gross island product
MBRS	Mesoamerican Barrier Reef System
PCU	Project Coordination Unit
SAM	Social Accounting Matrix
SECTUR	Tourism Secretariat
SERNA	Secretariat for Natural Resources and Environment
TU	Technical Unit
UMA	Municipal Environmental Units *[Unidades Municipales Ambientales]*

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EXECUTIVE SUMMARY

Requester:	Republic of Honduras	
Executing agency:	Secretariat for Tourism, through the Honduran Tourism Institute	
Amount and source:	IDB: (GEF[1] grant)	US$ 2,500,000
	IDB: (FSO)	US$12,000,000[2]
	Counterpart:	US$ 1,800,000[2]
	Total:	US$16,320,000
Terms:	Execution Period:	5 years
	Disbursement Period:	5 years

Objectives: The **development objective** is to consolidate the environmental management program created during the first stage, setting in place a self-sustaining institutional framework that supports ecosystems management and biodiversity conservation as well as environmentally sustainable tourism in the Bay Islands of Honduras. The program's **global objective** is to strengthen the conservation of globally significant coastal and marine habitats and species under national jurisdiction, including linkages with on-going regional programs such as the Mesoamerican Barrier Reef System (MBRS).

Description: The proposed GEF grant will finance the following activities:

(a) Strengthening of the Executive Commission for Sustainable Tourism of the Bay Islands and Technical Unit, including the preparation of bylaws and policy briefs aimed at integrating biodiversity considerations into land use planning and development, and the implementation of Bay Islands Conservation and Protected Areas Fee as a sustainable financing mechanism;

(b) Investments for the regional system of marine and coastal protected areas;

(c) A public outreach, participation and destination management strategy, including the establishment of a participatory

[1] Global Environment Facility.

[2] IDB Loan 1113/SF-HO (Bay Islands Environmental Management Program II) per IDB Board Resolution RGII-HO311P approved November 6, 2002.

oversight mechanism for environmental management, advance grassroot campaigns and an environmental leadership program for local private sector.

These above will be complemented by a small recycling program and institutional strengthening of the municipalities' environmental units and local environmental action committees.

Environmental/ social review: The Program will have an overall positive environmental impact in terms of: (i) increased local capacity for environmental management; (ii) enhanced protection of globally significant coastal and marine ecosystems; (iii) reduction of contaminated discharges in coastal waters; and (iv) enhanced incentives for compliance including consistent reporting on environmental trends and other mechanisms for promoting accountability. The Program will not result in significant or foreseeable adverse environmental or social impact due to the nature, scale and location of construction and post-construction activities. Preventive and mitigation measures have been incorporated into the Program Operating Regulations and specifications, including a participatory oversight mechanism that links all four municipal environmental units and is designed to strengthen the application of corrective measures.

Benefits and beneficiaries: Global environmental benefits will result from the integrated environmental management of the entire archipelago and surrounding waters coupled with intensive biodiversity conservation of 21,000 ha of marine ecosystems (coral reefs, mangroves and other wetlands), 2,500 ha of terrestrial ecosystems (tropical broadleaf and endemic pine forest) and associated flora and fauna, including several endemic, threatened or endangered species. Benefits will also accrue from the partial restoration of highly degraded habitats and reduced pressure on reef fish communities near urban areas. The Program's beneficiaries will be an estimated 30,000 residents to benefit from reduced rates of environmental deterioration in priority areas on all three islands as measured by water quality and reef health. Residents will also benefit from improved municipal services and reduced land use conflicts.

Risks: The capacity of all four municipalities to reach agreements on a coordinated environmental strategy emerged as an issue. To minimize the risk of future conflicts, all municipalities received technical assistance and strengthening through a technical operation (ATN/KB-7787) aimed at building local ownership in the permanent, decentralized program. To further mitigate risks during execution, the Executive Commission for Sustainable Tourism of the Bay Islands will receive technical assistance in carrying out a common work program and in establishing the financial mechanism that will ensure the sustainability of the

environmental management program.

During the course of preparing the operation, the uncertainty in projecting growth and development trends in the Bay Islands arose as an important theme for environmental management. A study was undertaken during project preparation of the factors underlying economic growth and land use changes in the archipelago. In addition to improving projections of future demand for services, the results of the study will be used to build capacity within the Executive Commission for Sustainable Tourism of the Bay Islands and the municipalities to analyze the full economic implications of growth on sustainable tourism and environmental quality.

Bank's country and sector strategy: The Bank's strategy for Honduras is oriented towards supporting Government's efforts at reducing poverty by: (i) accelerating sustainable growth through increased competitiveness and productivity; (ii) increasing efficiency in social safety networks and the productive capacities among the poor; and (iii) strengthening the governance and institutional capacity of the country, including decentralization and local economic development. This operation contributes to these fundamental themes by promoting an effective decentralized scheme for environmental management that is consistent with sustainable growth in tourism. The program offers opportunities to strengthen representation and meaningful participation of Afro-descendent communities and, as such, is consistent with the Bank's Plan of Action for promoting the social inclusion of racial and ethnic minorities. In addition, it strengthens the country's capacity for managing a significant portion of the Mesoamerican Barrier Reef System (MBRS), thereby contributing to regional integration in environmental management.

Special contractual conditions: None

Exceptions to Bank policy: None

I. FRAME OF REFERENCE

A. Overall context of the Bay Islands

1.1 Located approximately 50 km from Honduras's mainland, the archipelago of the Bay Islands encompasses three main islands and over 60 smaller keys. Although accounting for a very small part of Honduras's coastal zone, the Bay Islands have always represented a strategic asset, by virtue of their location and rich history, and by providing the base for the country's industrial fishing fleet.

1.2 Administratively and politically, the Department of the Bay Islands consists of four municipalities: Roatán and Jose Santos Guardiola on the island of Roatán, and the smaller towns of Utila and Guanaja. The coral reefs that surround the archipelago are part of the Mesoamerican Barrier Reef System and provide the main attraction for the tourism-related activities that dominate the local economy.

1.3 With an estimated 31,500 residents,[3] the Bay Islands are culturally and ethnically diverse, including indigenous Garifuna communities, Islanders (Afro-descendents), descendents of British settlers, and Mestizos (*Ladinos*). While the island economy has undergone several shifts, artisanal fisheries continue to be an important traditional economic activity, particularly in isolated Garifuna communities where fish and other marine products are still harvested for subsistence.

1.4 The Bay Islands have served as the major anchor site for Honduras's growing tourism industry over the past two decades, accounting for approximately 28% of all tourism arrivals in the last five years. Approximately 50,000 tourists were estimated for the archipelago in 2000, with an additional 60,000 day visitors from cruise ships arriving at Roatán that same year. While most tourists still travel to the islands for diving and, to a lesser extent, sport fishing, this has been undergoing change with the recent expansion of the cruise ship pier and the diversification of recreational services. Total tourism receipts are estimated in the neighborhood of US$55 million annually.

1.5 The nature of the Bay Islands' economy underscores the importance of protecting the natural resource base and environmental quality of the archipelago and surrounding waters. The marine ecosystem represents a unique comparative advantage for tourism, fisheries and land development and is also a key part of Honduras' natural heritage. As such, it brings to the forefront the need to integrate biodiversity conservation in all aspects of the archipelago's development, with a view of generating benefits that extend to the mainland and beyond.

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[3] Roatán: 17,331; Santos Guardiola: 7,537; Guanaja: 4,516; Utila: 1,978 (INE statistics, 2002).

B. Ecological significance of the Bay Islands and their biodiversity

1.6 The ecological significance of the Bay Islands has been confirmed by several global and regional priority-setting initiatives. The coral reefs are among the best known in Central America with relatively high levels of coral and reef fish biodiversity.[4] The Bay Islands were also one of 25 most highly ranked priorities for coastal and marine conservation in the Central Caribbean Ecoregion.[5] The archipelago received similar rankings in the World Wildlife Fund Mesoamerican Caribbean Barrier Reef (MACR) Ecoregional Planning Workshop and studies commissioned for GEF-financed project Conservation and Sustainable Use of the Mesoamerican Barrier Reef System (MBRS).

1.7 The Bay Islands support extensive and diverse coral reef resources and significant coastal habitats including beaches, coastal rivers, lagoons, mangroves, and seagrass beds that provide important breeding, nesting, foraging, and shelter habitat for numerous mammals, birds, reptiles, fishes, and amphibians important throughout the MBRS. Numerous reef and pelagic species have ecological significance as well as economic importance. Some 520 species of marine flora and fauna have been identified in the Bay Islands, including 285 benthic organisms and 54 taxa of corals—a number which is quite high for the Caribbean.[6] During surveys conducted as part of PMAIB I, 193 reef fish species were observed with a total of 233 taxa when species are added from the census of artisanal fishers. The abundance of fishes on the reef was estimated at 237 individuals per $100m^2$, and of the 193 species observed, 73 are consumed or commercialized by fishers. Fourteen of the species of reef and marine fishes found in the Bay Islands are listed under threatened status, with most of these protected under treaties and conventions. Several grouper and snapper spawning aggregations important to all of the MBRS are found in the Bay Islands, and fishes that reproduce in the Bay Islands range throughout the MBRS. Migrating sea turtles use nearly all coastal beaches and cays in the Bay Islands for nesting, especially around Utila and Barbaretta Island.

1.8 Mangroves occupy a total of 2,873 ha, or 12.3% of the total surface of the Bay Islands and are generally found strategically located at the mouths of streams draining the islands, thus playing a an important role as sediment and contaminant traps and nutrient sinks that protect the reefs and lagoons.[7] Mangroves cover 37% of the total land surface of Utila, one of the largest, contiguous and most unique mangroves in the Caribbean. Utila is also noted for its large expanse of wetlands and wet savannah and lagoons. Roatán has a large expanse of corozal palms

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4 Cortes, J. 1997. Status of the Caribbean Coral Reefs of Central America. *Proc. 8th Int. Coral Reef Symposium;* Almada-Villela, P. et al., 2002. Status of Coral Reefs of Mesoamerica. *Status of Coral Reefs of the World: 2002.* AIMS and Global Coral Reef Monitoring Network.

5 Sullivan Sealy, K. and G. Bustamante, 1999. Setting Geographic Priorities for Marine Conservation in Latin America and the Caribbean. Biodiversity Support Program and the Nature Conservancy.

6 Bouchon, et al., 2000. Coastal and marine ecosystems of the Bay Islands. PMAIB I Technical report AMC-01.

7 Lebigre, J.M. 2000. Mangrove wetlands of the Bay islands. PMAIB Technical report AMC-02.

covering its extreme western hills, with smaller extensions near the airport and French Harbour. On the island of Guanaja, stands of endemic pine (*P. caribaea*) were once quite pure and served as the source for Caribbean pine plantations throughout the world; these however were nearly destroyed by Hurricane Mitch in 1998 and are only now regenerating.

1.9 The Bay Islands provide habitat for several threatened, endangered and endemic species.[8] Five floristic species identified on the Bay Islands are the only sites where they have been found in Honduras; while for one species identified (*Jacquinia arborea*), Utila is the only site where registered in all of Central America. In terms of birds, two species of the Family of Trochilidae are listed as threatened including *Chlorostilbon canivetti* (in Roatán, Santa Elena, Barbaretta and Guanaja) and *Anthracothorax prevostii* (Roatán, Utila and Guanaja). The Roatán Parrot (*Amazona xantholora*) has not been observed since 1947 and is considered extinct. For reptiles, *Crocodylus acutus* (reported earlier but not recently observed) and Boa constrictor are listed as endangered, while *Iguana iguana* and *Cnemidophorus lemniscatus* are threatened. Iguanas and larger lizards are less frequently seen as they are sought after as food. As for endemic species, there are two species of geckos, two serpents, and three iguanas, including the endemic *Norops bicaorum*, found only in Utila and Roatán, *Norops utilensis* and the Utila spiny-tailed iguana (*Ctenosaura bakeri*) found only in Utila.

1.10 In the Bay Islands, as throughout the MBRS, these species and associated habitats have suffered declines in abundance and distribution due to water quality degradation, alteration of hydrology, encroachment and through degradation related to coastal development activities.

C. Socioeconomic context

1.11 The Bay Islands' economy depends directly on two sectors – tourism and fisheries, representing approximately 50% of gross island product and both closely linked to the archipelago's environment. All other activities provide services to these sectors, either directly as in the case of transportation or indirectly such as real estate and construction. The dynamic character of these sectors has led to accelerated growth over the last two decades, a phenomenon that has induced population growth rates approaching 8% annually, largely as a result of migration from various parts of Honduras and elsewhere.

1.12 A Social Accounting Matrix (SAM) was developed to help gain an in-depth understanding of the local economy.[9] The production and value-added figures in the SAM were used to estimate and analyze the structure of production and composition of the gross island product (GIP). (see table below). Roatán is the industrial and commercial center of the Bay Islands, and is the most diversified, but has the lowest per capita income due to GIP distribution among a larger

[8] Villeda, E., 2000. Rapid Ecological Assessment of the Bay Islands. PMAIB Technical report TER-01.

[9] Taylor, E. and A. Yunez-Naude, 2002. Economic Study of the Bay Islands. IDB final report.

population that includes a proportionally larger sector in poverty. Roatán was the first to develop tourism (West End to Sandy Bay in the 1970s), by far possesses the most of tourism infrastructure, and receives most of the tourist visits. Roatán is the only island receiving ships that dock at its new cruise ship pier. It is estimated that the total GIP of Roatán is just over US$95 million.

Table I-1. ISLAND VALUE-ADDED AND ITS DISTRIBUTION ACROSS PRODUCTION SECTORS, ROATÁN, UTILA AND GUANAJA

Sector	Roatán	Utila	Guanaja
Agriculture/Cattle	0.4%		0.0%
Artisanal Fisheries	7.4%	19.2%	2.2%
Industrial Fisheries	24.3%	NA	45.8%
Tourism Services [a]	14.1%	31.8%	1.0%
Transport	4.1%	2.5%	1.3%
Construction	7.2%	9.9%	2.3%
Commerce and Services [b]	26.7%	27.8%	31.2%
Industry [c]	13.6%	9.3%	16.2%
Real Estate	2.3%		0.1%
Total Gross Island Product (US$)	95,131,083	9,566,241	22,164,401
Population	24,868	1,978	4,516
GIP per capita (US$)	3,825	4,836	4,908

[a] Hotels, Restaurants, Dive Shops

[b] Pulperías, Supermarkets, Gas, Various Shops and Services, Communications

[c] Bottled Water , Electricity, Fish Packers

1.13 Utila's economy is dominated by tourism and receives about 15,000 tourists per year, with 13,000 of these being foreign. Utila's clientele (backpackers) spends less money than that those in Roatán and Guanaja. In Guanaja, industrial fishing is the principal economic activity, with 46% of the GIP coming from fishing activities and an additional 11% contributed by fish packing (included under "Industry" in the table). Guanaja has very few facilities dedicated to tourism—mostly package dive tours in any of the five resorts—with tourism accounting for only 1% of Guanaja's GIP. Also, tourism in Guanaja has not recovered to its pre-Mitch level and several resorts have closed operations.

1.14 Land tenure is complex in the Bay Islands, as property owners reside on the Islands, the mainland, in the Cayman Islands and the U.S. and other countries. An aggressive real estate market in the early 1990's combined with unclear property rights led to accelerated encroachment of public lands including areas that had been proposed as protected areas. The Supreme Court of Justice placed a ban in 1996 on the registration of land titles issued by municipalities in the Bay Islands. Completion of the four municipal cadastres during the first stage of the PMAIB cleared the way for the Supreme Court to lift the ban in August 2002, thus offering an unprecedented opportunity to address land management problems

in upcoming years. To date, nearly half of the property owners have presented documentation to formally register their properties under the new system. About 5% of all properties presented so far cannot be registered because of multiple claims. It is expected that many of the remaining parcels (outside of the existing protected areas) will be claimed as private property as the land clarification and process continues.

D. Legal and institutional framework for environmental management

1.15 Development and environmental management in Honduras are governed by an inter-related set of national laws and regulations that span a broad spectrum of public sector responsibilities for the environment, public health and safety, protected areas, and property rights. Of direct relevance to this operation are the following:

a. The Tourism Act of 1993 and several corresponding Executive Orders, including Executive Order No. 087 that sets aside the entire archipelago of the Bay Islands as a tourism zone; and

b. The General Environment Act of 1993 which provides the foundation for both the country's National System of Environmental Impact Assessments (SINEIA) overseen by the Secretariat for Natural Resources and Environment and the National System of Protected Areas (SINAP) overseen by COHDEFOR. The latter includes Executive Order No. 005-97 establishing the waters surrounding the archipelago as the Bay Islands National Marine Park.

1.16 These legal provisions combine with an array of by-laws and norms issued by the municipalities for various uses, thereby contributing to the Bay Islands' complex regulatory setting.

1.17 Several central government entities formulate development policies, issue regulations and make public sector investments that affect development in the Bay Islands. Prominent among them are the Tourism Secretariat (SECTUR) responsible for promoting Honduras as a destination and for establishing policies for the sector. Other central government entities include the Secretariat for Natural Resources and Environment (SERNA), which oversees the formal environmental review process for developments, the Governance Secretariat currently heading the decentralization initiative of the current Honduran administration, the Ministry of Public Works and the Fisheries Department within the Secretariat of Agriculture. Traditionally, central government decisions affecting the islands have been made with little or no local consultation. This has resulted in major public sector investments (or approvals of private sector investments) taken without consideration of the carrying capacity or socio-cultural context of the archipelago.

E. Advances made under PMAIB I

1.18 The Bank approved the US$23.9 million PMAIB- 938/SF-HO in 1994 in recognition of the strategic importance of the archipelago to the national economy. Combining baseline studies of coastal resources with improvements in basic sanitation in Roatán y José Santos Guardiola, land administration and institutional strengthening, the Program was designed to maintain the environmental quality that provides the basis for sustainable development of the archipelago.

1.19 Overall, the execution of the PMAIB has been satisfactory, particularly following the establishment of the Project Coordination Unit (PCU) in Roatán in 1998 by the Tourism Secretariat. Achievements of the first stage have included: (i) acquisition of an integrated diagnostic and geographic information system for environmental management, including quantitative data bases of physical, chemical and other water quality parameters (coastal/inland), slope stability, reef, mangrove and seagrass conditions. This also includes a long term water resources plan that provides guidance for the conservation of scarce groundwater resources on the island of Roatán; (ii) completion of the cadastre for the entire archipelago (10,700 parcels) and design of a land administration system that has been transferred to the four municipalities for fiscal, legal and land use planning purposes; this has been accompanied by improved services offered by the cadastre and environmental units of each municipality; (iii) improvements in water supply and wastewater collection systems provided to an estimated 11,000 residents in Roatán; In addition, the Program financed the construction of a sanitary landfill site for the island of Roatán as well as closure and remediation of the previously used dump site; (iv) completion of a comprehensive zoning scheme that links priority marine and terrestrial sites into a network of protected areas spanning the archipelago. Updates of the program as well as the baseline data and other results are available to the public through the PMAIB's web site (http://www.thebayislands.org).

1.20 Fundamental lessons learned from the first stage of the PMAIB have included: (i) the need to formalize representation (and accountability) of the municipalities and other stakeholders in setting priorities for land and environmental management; (ii) given the high population growth and rates of land use change occurring in the Bay Islands, there is a need for a dynamic and flexible environmental management program that stresses a local and permanent capacity for solving emerging development-related problems, with a specific emphasis on land, water quality, and sustainable growth; and (iii) the selection and implementation of financial mechanisms to ensure the sustainability of environmental management services have to proceed in sequence with the design, consultations and gradual implementation of corresponding institutional arrangements. These processes require sufficient time to build consensus and ensure ownership, particularly in a multi-cultural context.

1.21 Recognizing the need to formalize representation (and accountability) of the municipalities and other stakeholders in setting priorities for land and environmental management, the Government of Honduras created the **Executive Commission for Sustainable Tourism of the Bay Islands** pursuant to Executive Order no 005/2002 on August 6, 2002. Chaired by the Minister of Tourism, the Commission includes the four municipalities, the Environment and Natural Resources Secretariat (SERNA), the Governance Secretariat, the Departmental Governor, and a representative from the private sector from each municipality. The PMAIB PCU serves as the Commission's Secretariat. The Commission's main responsibilities are to: (i) promote consensus on sustainable tourism, environmental and growth management policies at the departmental scale; (ii) oversee the validation and endorsement of the comprehensive zoning plan developed during the first stage of the PMAIB, including the mid-term environmental quality targets; (iii) monitor compliance with the zoning plan and targets; and (iv) offer a forum to discuss adjustments in development, manage conflicts and promote coordination. The Commission is also expected to identify and endorse mechanisms for the financial sustainability of the program.

1.22 The Government of Honduras requested an additional loan to finance a second stage of PMAIB, which the Bank approved in November of 2002 (Loan 1113/SF-HO). This second-stage loan, expected to be operational in June 2003, is intended to consolidate the environmental management program initiated during the first stage, and establish a self-sustaining institutional framework that supports environmentally and socially sustainable tourism in the Bay Islands. To this end, the approved loan provides for the establishment of the Bay Islands Conservation and Protected Area fee. In addition, during preparation of the second stage loan, it was determined that a series of proposed activities was found to be eligible for co-financing by the Global Environmental Facility (GEF) under its focal area of biodiversity protection. A GEF PDF Block B grant was administered by the Bank (TC-01-09-01-6) helped finance additional on-site studies aimed at designing those activities and completing the analyses required in accordance with GEF policies and procedures (i.e., threats and root causes, incremental costs).

F. Threats to the integrity of the Bay Islands and root causes

1.23 The Bay Islands have long been subjected to a series of threats that place their ecological integrity at risk. However, in the last decade, these threats have become more serious as construction rates have outstripped the capacity of public services to keep up with the requirements of coastal development and, in some areas, the carrying capacity of both terrestrial and marine ecosystems. The following eight threats have been identified as prevailing, with the brunt of the impacts registered on Roatán, but increasing on Utila and Guanaja (see details in Annex D):

a. *Threat 1: Uncontrolled, Poorly-Planned Urban and Tourism Development without Adequate Environmental Engineering and Management.* A total of 126 new residential and tourist resort developments were in varying stages of

development in 2001, including 69 on Roatán, 47 on Utila and 20 on Guanaja—essentially doubling the actual number of such developments currently registered on the Islands. Urban areas on Roatán, where development is most active, have more than doubled from 1992-1999. Clearing of vegetation, dredging and filling, canalization, gravel extraction, and sand and coral rock mining associated with the construction of tourism resorts, hotels, restaurants, and other businesses, as well as new homes is reducing and/or significantly altering upland watersheds, mangroves, freshwater wetlands, beaches, shorelines, ironshore and seagrass beds on all three islands, but especially on Roatán. In general, construction rates far outpace the local capacity to plan for development.

b. *Threat 2: Unsustainable Operation of Residential, Industrial and Tourism Infrastructure.* This threat deals with the operation of the urban and tourism infrastructure mentioned under the first threat. Wastewater collection services on the islands only cover a small portion of the population and businesses, and about 70% of all wastewater is discharged directly to streams, canals or directly to the ocean, including waste from fish processing and packing facilities. Disposal of untreated wastewater loads local waters with organic and chemical contaminants increasing eutrophication in bays, mangroves, seagrass beds and reefs.

c. *Threat 3: Poorly-planned and Unsustainable Cruise Ship Tourism.* Roatán's new cruise ship dock is now receiving as many as seven ships a week, with each boarding from 800-3,000 passengers. As many as a third of these are disembarking to use area beaches and snorkeling or scuba diving on the reefs. In addition to threatening carrying capacity of the most accessible reefs and associated habitats, tourists on these one-day visits can overtax public services and overcrowd local beaches, businesses and cultural sites, thereby reducing the quality in the experience of extended-stay tourists.

d. *Threat 4: Poorly-engineered, Constructed and Maintained Roads.* With increased land speculation and real estate development in the municipalities of Roatán and Santos Guardiola, the density of roads has been rapidly increasing. Most of these are low standard dirt roads built by property owners without following proper engineering norms. Many are routed through environmentally fragile areas, fracturing ecosystems. These roads are prone to cause land slippages and lack proper drainage, thus concentrating runoff, accelerating overland erosion and causing sediment loading in streams, seagrass beds and lagoons, and eventually reaching coral reefs.

e. *Threat 5: Inappropriate Agricultural Uses along the Coast and in Upland Watersheds.* While slash and burn and cattle ranching are practices in decline, disturbed lands continue to cause erosion and sedimentation, loss or fracturing of natural terrestrial vegetation, disruption in infiltration and drying of aquifers, contamination of surface water sources, and changes in ecological processes and losses in diversity. The first stage of the PMAIB

completed a detailed rapid ecological assessment of the micro-watersheds and their land use of the archipelago.

f. *Threat 6: Overfishing by Artisanal, Industrial and Sport Fishers*. Industrial, artisanal and sport-fisher overfishing has reduced stocks of the most prized species—especially conch, shrimp, lobster and grouper. With the largest industrial fleet in Central America, Honduran lobster, shrimp and conch fishers have put enormous pressure on stocks throughout the MBRS and especially in the waters between the Bay Islands and the North Coast of Honduras. Fishers at all levels have traditionally ignored regulations controlling the use of illegal equipment, closed-season, closed-areas, size and number limits. This has resulted in overfishing of pelagic and resident fish, reducing reproductive processes and stocks available for subsequent fisheries. The first stage of the PMAIB completed detailed socio-economic and biological assessments of the artisanal fisheries of the archipelago.

g. *Threat 7: Inappropriate Port Management, Shipping and Navigation Practices*. Ports located in French Harbour, Coxen Hole and Oak Ridge on the Island of Roatán, Cayo, and Armadores on Guanaja and Utila Town are the most contaminated sites in the Bay Islands. Construction and dredging activities associated with these ports and navigation channels disperse sediments into suspension that can smother and stress seagrass beds and nearby coral reefs, reduce penetration of light affecting photosynthetic processes, and alter local oceanographic processes. Inadequate operation of ports (especially petrol terminals and stores), shipyards and careless navigation can lead to spills of hazardous cargoes, fuel and lubricants which can contaminate waters and impact nearby reefs, beaches, bays and estuaries and the living organisms that depend on them.

h. *Threat 8: Natural Oceanographic and Climato-Meteorological Phenomena*. Oceanographic and climato-meteorological features are permanent and cyclical phenomena in nature and only represent threats inasmuch as improperly executed development activities expose humans and their infrastructure to greater vulnerability of damage. The impacts described under the other threats, including erosion and sedimentation, contamination, as well as physical damage, are exacerbated during tropical storm events and more intense where coastal areas have been improperly altered for urban and tourism infrastructure, as witnessed in October of 1998 with Hurricane Mitch.

1.24 The threats described above are a result of a series of structural causes of social, political and economic nature. Many of the intermediate and root causes are the same or similar among several or all of the threats. This is especially true of causes related to institutional weaknesses at the municipal and national level of those agencies charged with applying and enforcing laws and regulations related to environmental protection, sustainable fisheries and protected areas

management. Hence, treating one intermediate and/or root cause would have positive influence in resolving problems associated more than one of the threats.

1.25 Among the intermediate causes for nearly all of the threats is that aggressive land and resource development is taking place in the Bay Islands largely in absence of municipal development strategies and plans, zoning and building codes, engineering standards for road building, and without the benefit of an integrated coastal resources management plan. The national and municipal governments lack clear regulations for preparing environmental impact assessments (EIA) in coastal and marine areas, and issue building permits without conditions or adequate mitigation measures.

1.26 Root causes of the threats to the ecosystems of the Bay Islands are most closely attributed to Honduras' inadequate tourism development model, which has been shifting gradually to one of competing with sun and sea resorts throughout the Caribbean and away from the uniqueness of the Bay Islands, and diving and ecotourism. In addition, central governmental authorities do not have the capacity to ensure that due diligence is carried out by the proper authorities such that environmental and natural resource laws and regulations are enforced. Another root cause has been the absence of coastal zone management plan that integrates ecosystem and biodiversity conservation and has strong local ownership in the articulation of environmental quality objectives. For a more detailed analysis of root causes of all the threats and root causes see Annex D.

G. The Program strategy

1.27 The strategy for the second stage of the PMAIB is to consolidate the institutional arrangements and on-site capacity for environmental management as the foundation for a permanent, self-sustaining program in the Bay Islands. This will include support to the Executive Commission for Sustainable Tourism as a cooperative arrangement that provides for greater representation and effective participation of municipalities, civil society and the private sector in managing the effects of tourism growth on environmental quality. In the process, the Commission will acquire the capacity to use decision support tools developed during the first stage, such as the zoning and water resources plans in combination with municipal environmental regulations, by-laws, monitoring, tariffs, service fees and other financial instruments. On-site capacity for environmental management will be greatly expanded through the establishment of a system of marine and terrestrial protected areas operated jointly with organizations for the purposes of maintaining biodiversity and providing ecotourism services. This will be complemented by a broad-based outreach strategy aimed at maintaining the competitiveness of the Bay Islands as a tourism destination while also mitigating social and cultural impacts of change.

1.28 Recognizing the key role of municipalities in development and land use planning, the Program includes a strong focus on building administrative and decision-making capacity within all four of the municipalities of the Bay Islands. To

further the process of consolidation, the Program will also support the modernization of the land property registry, the first pilot of its kind to be implemented in Honduras. The institutional strengthening and environmental management will be complemented by a small package of investments in basic sanitation, with a view of expanding coverage to communities and islands not included in the first stage. The emphasis will continue to be on the institutional and financial sustainability of these basic services.

1.29 The Bank's strategy for Honduras is oriented towards supporting Government's efforts at reducing poverty by: (i) accelerating sustainable growth through increased competitiveness and productivity; (ii) increasing efficiency in social safety networks and the productive capacities among the poor; and (iii) strengthening the governance and institutional capacity of the country, including decentralization and local economic development. This operation contributes to these fundamental themes by promoting an effective decentralized scheme for environmental management that is consistent with sustainable growth in tourism. The program offers opportunities to strengthen representation and meaningful participation of Afro-descendent communities and, as such, is consistent with the Bank's Plan of Action for promoting the social inclusion of racial and ethnic minorities. In addition, it strengthens the country's capacity for managing a significant portion of the Mesoamerican Barrier Reef System (MBRS), thereby contributing to regional integration in environmental management.

1.30 During the preparation of the Program, a set of activities was determined to be eligible for GEF co-financing under its Operational Program for biodiversity. A technical cooperation financed by a PDF Block B grant (ATN/PD-7841-HO) was used to confirm the GEF contribution to the Program, including the analysis of incremental costs.

1.31 The Program is consistent with the strategies and principles of the GEF with respect to: (i) conservation of biodiversity and its sustainable use; (ii) conservation of marine ecosystems and their sustainable use; (iii) maintenance of genetic resources; (iv) empowerment of all stakeholders, including vulnerable groups that depend on biodiversity; (v) national capacity building related to mainstreaming of biodiversity conservation; and (vi) international linkage for developing best practices and promoting their global replication. As described below, the GEF grant will be used to support the full participation of all stakeholders in the protection and restoration of coastal and marine ecosystems, including implementation of the environmental oversight mechanism on all three islands, biodiversity-related monitoring, the investments for the regional system of protected areas, and the promotion of private sector activities in support of biodiversity conservation. In addition, the grant will be directed to building links between the PMAIB, other parts of the MBRS and other archipelagos of global significance as a contribution to best practice and replicable models in decentralized biodiversity conservation.

II. THE PROGRAM

A. Objectives

2.1 The **development objective** is to consolidate the environmental management program created during the first stage, setting in place a self-sustaining institutional framework that supports ecosystems management and biodiversity conservation as well as environmentally sustainable tourism in the Bay Islands of Honduras. The program's **global objective** is to strengthen the conservation of globally significant coastal and marine habitats and species under national jurisdiction, including linkages with on-going regional programs such as the Mesoamerican Barrier Reef System (MBRS).

2.2 Specific objectives of the GEF operation are to: (a) integrate biodiversity and ecosystem management considerations in policies, norms and regulations of the regional institutional arrangement for environmental management (Executive Commission), particularly with respect to protected areas and environmental monitoring; (b) implement financing mechanisms for biodiversity conservation; (c) manage the network of marine and terrestrial protected areas in a cooperative manner; (d) raise awareness and understanding as to the uniqueness and value of the archipelago and the need for environmental management; (e) strengthen the capacity of local government, non-government and community organizations to more capably participate in activities of environmental due diligence and biodiversity conservation.

B. Structure

2.3 The overall PMAIB II program consists of three components as follows:

a. Component I: Consolidation of the regional scheme for environmental management and sustainable tourism;

b. Component II: Expansion of environmental sanitation services;

c. Component III. Municipal strengthening and land management.

2.4 The majority (94%) of the GEF grant funds will be used to finance incremental activities under Component I. The eligible **incremental activities** are described briefly below. For purposes of completeness, a brief summary is also provided of the other program components that will be financed by the accompanying IDB loan approved in November 2002 for PMAIB II (Loan 111/SF-HO).

2.5 Taken together, these activities will result in improved, systematized procedures for development review in the archipelago, increased coordination among municipalities on matters pertaining to shared natural resources such as marine protected areas and groundwater, enhanced surveillance and enforcement of permit conditions and environmental regulations, as well as widely disseminated

information on trends in environmental quality. As a result of this operation, development decisions will display greater compliance with environmental quality targets set forth in the departmental zoning plan developed during the first stage.

C. Strengthening of the Executive Commission for Sustainable Tourism and its Technical Unit

2.6 This subcomponent will provide resources to strengthen and support the work program of the Bay Islands Executive Commission for Sustainable Tourism in line with the GOH's progressive strategy for decentralization. The Commission will be supported by a small Technical Unit (TU) to be gradually but fully financed by revenues collected for the environmental management program as the operation reaches its fourth year of execution.

2.7 The operation will finance the following incremental activities related to the Commission's work:

a. Preparation of environmental guidelines, norms and support for the drafting of municipal bylaws aimed at implementing the comprehensive departmental zoning (Master) plan. This will include procedural guidelines for submissions to the Commission, grant applications, permits, concessions and regulatory modifications, and training of all Commission members and Technical Unit staff in these procedures;

b. Commissioning of policy briefs and in-depth reviews of issues included in the work agenda of the Commission, including a study of alternatives to deal with migration to the Bay Islands and development of a policy for management of cruise ship tourism, and training in key policy areas and conflict management, including the control of dredging and sedimentation, groundwater conservation, expansion of the protected area network through conservation easements;

c. Establishment of technical-operational working groups among Technical Unit staff and representatives of stakeholders in government, NGOs and community organizations, to coordinate activities under the Program; and

d. Departmental-level forums included as part of the Commission's quarterly meetings to solicit public opinion and gain support for environmental management initiatives and quality targets related to the Environmental Management Master Plan and zoning proposals, endorsement of department-wide and municipal ordinances, internalization of a water resources conservation plan for Roatán, and promotion of consistent standards, tariffs and permit fees as additional incentives for private sector compliance with environmental quality targets, and demonstrations on the use of decision support tools for land use planning and development review.

2.8 To complement the above, the operation will finance the establishment of the TU to be permanently based in Roatán, including the recruitment of a protected area coordinator, a public outreach and communications coordinator and a water quality specialist for the first two years of operation. In addition to serving as the permanent secretariat for the Commission, the TU will be responsible for coordinating functions requiring cooperation across municipalities including: operation of the comprehensive GIS-based land use planning and monitoring system; administration of the marine protected area system; the biological and water quality monitoring network and analysis of data; technical quality control and support to Municipal Environmental Units and SERNA in EIA process, permitting and due diligence; and facilitating implementation of local economic development policies and competitiveness strategies. The Technical Unit will also be responsible for analyzing and reporting periodically on the results of the monitoring and investigation activities and progress in meeting Program objectives based primarily on a limited set of physical and socioeconomic indicators. This information will be consolidated in an annual "Sustainable Tourism Report Card" and for broad dissemination as well as a mechanism for monitoring the overall effectiveness of the Executive Commission's and Technical Unit's operations toward achievement of Program goals.

2.9 To further ensure the consolidation and sustainability of the program, the Bay Islands Conservation and Protected Areas Fee will be established in accordance with the results of studies and consultations conducted during preparation[10]. The fee will function as a single general entrance fee for the departmental system of protected areas (marine and terrestrial) to be charged to tourists (with differentiated rates for foreigners, national visitors, Central Americans and other visitors). A special fund will be established to receive the revenues collected from the fee. The resources will be destined primarily to finance: (i) operation of the protected area system; (ii) recurrent costs for operation of the Technical Unit, including all permanent positions starting the third year of operation; (iii) provision of a subsidy to cover operating costs (particularly energy costs) for wastewater treatment facilities in excess of local capacity to pay for such services; and (iv) future investments in environmental management approved by the Commission. A business plan stipulating the operational aspects for collecting the fee and administering the fund is under preparation. Its implementation, including the legal and other services for the establishment of the Fund will be financed by the operation. As stipulated in the business plan, the operation will also finance studies of other complementary sustainable financing mechanisms and incentives, including: development impact fees charged to developers based on the value of newconstruction on the Islands; well-drilling/water rights fees; tax breaks for conservation easements in critical watershed, coastal or wetland area, and for technologies to save energy and water; and a schedule of charges for licenses, permits and fines.

[10] Smith, S. 2003. Bay Islands Environmental Management Program: Sustainable Financing Mechanism. Draft report to the Executive Commission on Sustainable Tourism of the Bay Islands and the IDB.

D. Investments for the Regional System of Marine and Coastal Protected Areas

2.10 This subcomponent encompasses the majority of the incremental activities to be financed by the GEF funds. It includes investments aimed at the full legal establishment and management of six protected areas (3 marine and 3 terrestrial) identified as first order priorities for biodiversity conservation during the preparation of the program. The following protected areas will be fully protected under the Program:

a. *On the Island of Roatán*: West End/Sandy Bay (marine), and Port Royal (terrestrial).

b. *On the Island of Utila*: Turtle Harbor-Rock Harbor (marine) and Great Wetlands (terrestrial).

c. *On the Island of Guanaja*: Michael Rock (marine); and Guanaja Pine Forest Reserve (terrestrial).

2.11 An additional six protected areas will receive a basic level of management, including demarcation, periodic patrolling and monitoring: Western Roatán Forest (terrestrial), Santa Elena/Barbaretta (marine) and Barbaretta Island (terrestrial); Raggedy Key-Cayitos Marine Reserve and Pelican Rock (terrestrial) on Utila; and Half Moon/Southwest Key Marine Reserve (Guanaja). The investments and activities to be supported in each area are included in management plans formulated during the first stage of the PMAIB and consistent with the regional zoning plan. For each protected area unit, the Program will finance a range of activities including:

a. legal delimitation and physical demarcation of boundaries;

b. Mobilization and on-the-job training of field personnel (including patrol units);

c. public information and guide services, including training in natural history and ecology;

d. patrolling and control of illegal fishing and hunting, overcrowding, predation of natural resources and vandalism;

e. fire prevention and abatement;

f. low-impact visitor access (terrestrial and marine), search and rescue, safety and communication equipment;

g. basic trail improvement and signage;

h. acquisition and installation of mooring buoys;

i. restoration and/or enhancement of habitat and degraded or damaged natural ecosystems such as coral reefs, seagrass beds, mangroves, critical watersheds and fragile hill and riparian lands, and forests.

2.12 The Program will finance the construction of three *multiple-use visitor centers/museums*, one on each island. Proposed sites have been selected with the land to be provided as counterpart by the Government of Honduras and the municipalities. Each center will have interpretive displays and reference materials relating to the natural and socio-cultural history of all of the Bay Islands and each respective island in particular.

2.13 The Program will support pilot activities aimed at promoting biodiversity conservation and ecotourism on private lands. The intent here is to provide alternative activities to diving and reduce tourism pressure on the public protected areas. Projects will be selected by a committee made up members selected from the PMAIB Technical Unit, the Municipal Environmental Units and the community at large. Examples of the type of projects that could be financed are: Utila EcoTrail (already formally proposed by the Iguana Research Station), Pumpkin Hill Trail and Caves (Utila), Punta Gorda Cultural House (Roatán), and the Michael Rock Peak Hike & Bike Trails (Guanaja).

2.14 Financial resources under the Program will be used to develop a series of *sustainable fisheries management activities for artisanal fishers* in close coordination with the GEF MBRS program. Activities will include: (i) the establishment of exclusive fishing zones for selected communities (e.g. Punta Gorda, Santa Elena, Cayitos); (ii) training of artisanal fishers in best practices of sustainable fisheries management; (iii) delimitation and control, on a pilot basis, of no-take zones and community vigilance, including monitoring and due diligence to discourage and/or report illicit fishing; (iv) placement and monitoring of efficacy and use of four fish aggregating devices for pelagic fish, as an alternative to reef fishing; v) and retraining of artisanal fishers as ecotourism and catch-and-release sportfishing guides. Also, in marine protected areas, a vessel and artisanal fishing gear registry will be established with the participation of local fishers as a transition toward a limited entry for fisheries and/or seasonal or permanent no-take system.

2.15 As part of the Program, PMAIB will finance the *management of at least three priority watersheds*. Preliminarily, these are identified as Coxen Hole and Oak Ridge/El Bight on Roatán and Soldado Gully or Sandy Gully on Guanaja. Watershed management activities will include: reforestation, fire control, rehabilitation of gullies and the construction of sedimentation dams.

2.16 The last activity proposed under this subcomponent is that of monitoring and investigation of environmental conditions and dynamics of coastal and marine ecosystems, and the sustainability of tourism. This effort will build on the baseline and monitoring framework established under the first phase of PMAIB and further systematize the timely analysis of data collected. The current regime of water quality monitoring (including covering costs for laboratory analyses) and artisanal fishery capture data will be continued. Using the baseline established under the first phase of PMAIB, the Program will sponsor the monitoring of cover, vigor, and dynamics of mangroves, seagrass beds and coral reefs using the

recently adopted MBRS protocols and manual. The Program will also facilitate applied investigation of a series of priority themes, including:

a. determination of carrying capacities on selected marine and coastal protected areas, and impacts of tourism and land development to reefs;

b. dynamics and recuperation of fish aggregation sites in Roatán (off Dixon Point), Guanaja (Caldera del Diablo) and Utila (Blackish Point, Cayitos and seamounts);

c. relation of variations in water quality (nutrients, bacteria, sedimentation) to reef condition.

2.17 As a result of these investments, an estimated 21,000 ha of marine ecosystems (coral reefs, coastal lagoons, mangroves) and 5,280 ha of coastal forests on the islands will be brought under an intensive conservation management regime.

E. Public outreach, participation and local destination management

2.18 The long-term sustainability of the Bay Islands depends on a public outreach and participation strategy that cuts across all sectors, linking ecosystems and public health, land, property rights, economic development and governance as key aspects of island life, in time, resulting in greater local commitment to maintain the Islands as a quality destination. To this end, the operation will finance: (i) public participation that promotes social inclusion and access to improved environmental conditions for vulnerable groups; (ii) an initiative promoting private sector leadership in environmental management.

2.19 This subcomponent will finance incremental outreach and participation activities such as:

a. Broad-based 'shock' campaign to promote the implementation of the comprehensive environmental zoning plan developed during the first stage. The emphasis will be on information useful to residents, their rights, and the benefits of participation in key environmental and land management activities. Communication techniques will be tailored to the needs of traditional groups, including the Garifuna, women heads of households, and vulnerable groups. Socio-cultural guidelines for the conduct of the campaigns based on local case studies in potable water, land rights and protected area use were developed during preparation. This will include the production of a quarterly bulletin on Program activities and updated of best practices as well as the annual "State of the Bay Islands" report.

b. Strengthening of community organizations to participate more effectively in environmental management. This includes training workshops for community leaders in environmental and land use regulations, norms and operational rules. The operation will also support the establishment of a participatory oversight mechanism for environmental management, whereby local groups (e.g., dive operators, neighborhood groups) will provide on-site, voluntary

monitoring of compliance with development permits, Environmental Impact Assessment (EIA) conditions and other regulations, thereby reinforcing local patrols for detecting and reporting violations to each municipal Environmental Unit and subsequent follow-up by the Solicitor General.

c. Environmental education activities, including the development of a formal, bilingual Bay Islands-specific environmental education curriculum, an informal multi-media environmental education campaign and a special outreach program with local churches.

2.20 To promote leadership in environmental management among local businesses, activities will also be included to strengthen and promote a culture of environmental management in tourism operators in the Bay Islands. Businesses such as hotels, restaurants, as well as dive and sports fishing operators will be supported in incorporating environmental best practice and environmental management systems (EMS). Specific activities, to be financed by 1113/SF as baseline would include: (i) signage and campaigns targeting the hotel and dive operations; (ii) demonstrations of good business practices for small islands, including recycling and vector control; (iii) at least 30 environmental assessments of hospitality, dive and sports fishing businesses based on best practice questionnaires; (iv) at least four detailed audits of establishments interested in serving as industry leaders in implementing improvements; (v) eight training courses for hotels, and dive and sports fishing operators on best practices and environmental management systems; and (vi) recognition and promotion (through annual environmental awards and a labeling scheme for operators that meet minimum levels of best practices).

F. Expansion of environmental sanitation services

2.21 This component, funded exclusively by the IDB loan and GOH counterpart, will support the expansion of services for water supply, wastewater collection and treatment, and solid waste management to ensure that all islands have improved coverage for public health and environmental quality purposes, consistent with the archipelago's sustainable development. Sanitation services will be extended to small town residents in Utila, Guanaja and newly settled or isolated communities on the island of Roatán that were not part of the first stage of PMAIB. The emphasis will be on ensuring the sustainable provision of services through the timely selection and implementation of institutional arrangements and tariffs. This will benefit an estimated 20,000 residents living in primarily poor urbanizing neighborhoods or isolated fishing communities. The table below summarizes targets for each municipality.

No.	Description of System	Population	Households
1	WW Utila	1,857	720
2	WW El Cayo (Guanaja)	1,779	549
3	PW+WW+SW Savannah Bight+East End (Guanaja)	1,093	409

4	PW+WW Los Fuertes (Roatan)	3,565	953
5	PW+WW Flowers Bay+West End (Roatan)	1.855	669
6	PW+WW Politilly Bight+Punta Gorda (S. Guardiola)	1,878	522
7	Sanitary landfill (Santos Guardiola)	7,537	2,172
WW	Wastewater services		
PW	Potable water services		
SW	Solid waste management services		

2.22 These investments will result in the recovery of highly degraded coastal areas (lagoons, fringing reefs and mangroves) adjacent to each urban area. Such results are expected in the case of the closure/rehabilitation of the dump and construction of the new sanitary landfill in Oak Ridge, currently one of the most highly contaminated bays along the southern shore of Roatán. The water quality baseline studies and subsequent monitoring by the PCU have indicated that links exist between the high concentrations of heavy metals and contaminated bottom sediments and the untreated leachates from the existing dump located in a mangrove. Closure of the site and relocation to a more suitable landfill will help slow the spread of contaminants in the adjacent coastal lagoon. Similar positive impacts are expected as a result of waste collection and disposal solutions on Guanaja (Savannah Bight/East End) and Utila.

2.23 To complement this component, the operation will finance the *development and operation of recycling activities in the Bay Islands.* This will include an awareness and promotional campaign to promote separation of organic from inorganic solid wastes. Funds will be used to develop and put into operation pilot recycling and composting facilities in at least four locations. The operation will also facilitate investigation and linkages with commercial ventures for recycling of plastics.

G. Municipal strengthening and land management

2.24 This component aims to strengthen the capacity of the four municipalities as principal agents orienting and reaching decisions pertaining to the sustainable development of the archipelago, particularly where these pertain to land management. The activities have been regrouped into two sub-components for execution and monitoring purposes, and will be financed almost exclusively under the IDB loan and GOH counterpart. Both include baseline activities that are highly complementary to the GEF-financed activities.

2.25 The first subcomponent will finance the implementation and monitoring of Municipal Action Plans (*Planes de Acción Municipal – PAMs*) in all four municipalities of the Department. These plans have been formulated on the basis of a common strategy for municipal development and prepared with the support of an IDB technical cooperation (ATN/KB-7787) using a participatory methodology involving the municipal corporations and their various constituencies. As part of these plans, the municipalities will propose land-use

zoning plans based on the departmental zoning scheme developed during the first phase of PMAIB.

2.26 One important activity under this subcomponent will be the *strengthening of the Municipal Environmental Units (UMAs) in environmental management and elements of sustainable tourism*. At the outset, this will require that the UMAs be reinforced with additional personnel as a basis for receiving equipment and training. In order to do this, it is proposed that the Municipal Cadastre Units be combined with the UMAs to obtain more professional depth and due diligence capabilities. Training themes will include EIA, standard mitigation and best practices for coastal/marine environments (including zoning and building codes), environmental audit and inspection, enforcement of mandates and fine schedules, and constituency building, public participation and inter-institutional coordination for environmental management. Part of the actions required to strengthen the municipalities is in the area of *drafting, enacting and applying municipal ordinances in environmental management, land use zoning and natural resource development*. In consultation with local committees and the respective municipal governments, ordinances will be drafted on a thematic basis and then promulgated by each of the four municipalities as applicable to their PAMs and zoning plans.

2.27 The second subcomponent, fully financed under the IDB loan and municipalities counterpart, will finance the establishment of a fully modernized departmental property registry linked to the four municipal cadastres that were developed during the first phase of PMAIB. As such, it will contribute to enhanced land security for island residents and the integrity of boundaries of protected areas, while also improving the efficiency and sustainability of land administration services.

H. Cost and financing

2.28 The estimated cost of the incremental activities described in this Plan of Operations is US$2,500,000, to be financed with nonreimbursable funds from the Global Environment Facility GEF. The Table below shows the complementary of the incremental GEF activities and ‘baseline’ activities already financed in the Program (Loan 111/SF-HO). For a detailed breakdown of costs by incremental activity see Annex E.

Table II-1. CONSOLIDATED BUDGET BY COMPONENT (in US$ Thousands)

Categories	IDB[11]	GEF	LOCAL[10]	TOTAL	%
1.0 PROJECT ADMINISTRATION	**614**		**1,061**	**1,675**	10.3%
1.1 Program Coordination Unit (PCU)	514		1,061	1,575	
1.2 External audits	100			100	
2.0 DIRECT COSTS	9,824	2,500	610	12,934	79.3%
2.1 Consolidation of departmental scheme	**969**	**2,500**	**250**	**3,719**	**22.8%**
2.1.1 Strengthening of Commission	200	521	127	848	
2.1.2 Investments in protected areas	200	1,489		1,689	
2.1.3 Social communication strategy	569	490	123	1182	
2.2 Expansion of sanitation services	**6,345**		**350**	**6,695**	**41.1%**
2.2.1 Studies	90			90	
2.2.2 Construction of works	4,955		300	5,255	
2.2.3 Sanitation equipment	700			700	
2.2.4 Supervision of works	600		50	650	
2.3 Municipal strengthening and land management	**2,510**		**10**	**2,520**	**15.4%**
2.3.1 Municipal capacity building	1,716		10	1,726	
2.3.2 Modernization of the registry	794			794	
3.0 UNALLOCATED	**1,113**		**59**	**1,172**	**7.2%**
4.0 FINANCIAL COSTS	**449**		**70**	**519**	**3.2%**
4.1 Interest	329			329	
4.1 Credit commission			70	70	
4.3 Inspection and administration	120			120	1%
TOTAL	**12,000**	**2,500**	**1,800**	**16,300**	**100%**
Percentage	73.62%	15.34%	11.04%	100%	

III. PROGRAM EXECUTION

A. Program execution and administration

[11] IDB Loan 1113/SF-HO (Bay Islands Environmental Management Program II) per IDB Board Resolution RGII-ho311P approved November 6, 2002.

3.1 The Tourism Secretariat will be responsible for overall coordination and execution of the Program. The Minister and the Vice-Minister will have ultimate responsibility for the Program. The Secretariat will hire a Program Director to head the Program Coordination Unit (PCU) to be restructured for the purposes of executing the second stage. The updated structure and responsibilities of the PCU are described in the approved Loan Document.[12]

3.2 Execution will be guided by Program Operating Regulations that include, among other items, the selection criteria for Program activities, terms of reference for the Project Director and other PCU positions, procedural rules and operating regulations for the participation of the Commission in the Program (including specific responsibilities of its members), the requirements for the annual work plans, guidelines for community consultation and participation, conflict resolution and management, guidelines for coordination with local government and environmental review procedures required for program investments. Draft Program Operating Regulations were developed during preparation and discussed between SECTUR and the Bank, with specific aspects consulted with municipalities. Definitive Program Operating Regulations were agreed upon between SECTUR and the Bank during a launching mission held in March 2003.

3.3 The Executive Commission for Sustainable Tourism of the Bay Islands will play a supporting role in promoting inter-institutional coordination, policy dialogue and consensus on sustainable tourism, environmental and growth management issues and priorities. The responsibilities and administrative procedures of the Commission, pursuant to Executive Order No. 005/2002, are included in the approved Operating Regulations.

3.4 In terms of financial administration, the PCU will maintain a separate account and prepare and submit to the Bank specific annual financial statements for the use of the resources of this operation in accordance with the policies and requirements of the Bank and the GEF. These statements will be submitted within one hundred and twenty (120) days after the closing of each fiscal year as a distinct part of the overall financial reporting for the Program. An audit firm acceptable to the Bank will be responsible for the audit of the financial statements submitted to the Bank.

B. Procurement of goods and services

3.5 The procurement of goods, works and consulting services to be financed with program resources will be carried out following Bank procurement policies and procedures. The PCU will use international public bidding for the procurement of consulting services that exceed US$200,000, the procurement of goods that exceed US$350,000 and civil works that exceed US$1.0 million. These threshold amounts are justified considering that in similar projects in the country and in Central America, the participation of international firms is attracted when the cost of the procurements exceed these threshold amounts. All bidding below these

[12] Bay Islands Environmental Management Program II (HO-0198). Loan Proposal. PR-2705. 2002.

threshold amounts will be carried out following the policies and procedures specified under national legislation, provided they are not in conflict with the procurement policies and procedures of the Bank. Procurement of individual consulting services will also be carried out in accordance with Bank procurement policies and procedures and following the Procurement Plan described in the Program Operating Regulations.

C. Execution and disbursement schedule

3.6 The disbursement schedule for the program, by source of funds, is presented in Table III-1 below:

Table III-1. DISBURSEMENT SCHEDULE (in US$ Thousands)

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB	1,800	3,800	4,000	1,700	700	12,000
GEF	530	485	1,000	210	275	2,500
Local	235	615	495	340	115	1,800
Total	**2,565**	**4,900**	**5,495**	**2,250**	**1,090**	**16,300**
Percentage	**17**	**30**	**33**	**14**	**7**	

D. Monitoring and evaluation

3.7 The program will be carried out in accordance with annual work plans setting out targets (in relation to the benchmarks and impact indicators), activities, schedule and budget for the relevant year. Within two months of the end of each calendar year of program execution, the PCU will send the Bank a report on the extent to which the targets set out in the work plan for that year have been achieved, problems and delays encountered, and a proposed work plan for the ensuing year. Within one month of receipt of these documents, the Bank, SECTUR and the Commission will meet to review performance of the previous year and to approve the work plan of the current year.

3.8 ***Mid-term evaluation***. The project team, together with SECTUR and the Commission, will conduct a mid-term evaluation of the Program's execution, as part of its normal monitoring activities, no later than two years after the first disbursement. The Bank Country Office in Honduras, following Bank procedures, will request the mid-term administrative mission. The key objectives of the mid-term evaluation will be to: (i) assess the degree of advance towards the Program's objectives and expected results; (ii) assess the degree of effective participation in the Program and coordination among local stakeholders, including municipalities; (iii) review the data being collected on performance key indicators of results; and (iv) review and reach agreement on any modifications required to expedite execution.

3.9 ***Final evaluation***. As part of the monitoring activities included in Component 1, the Program includes the collection of data on water quality, reef health, other

environmental indicators, artisanal fisheries, diving and other resource use as well as visitor statistics. This information will be used to conduct a final evaluation in the last semester of execution, using as a reference point the 1999-2000 baseline acquired during the first stage. The information would also be available for an ex-post evaluation should the decision be made to conduct one.

IV. BENEFITS AND RISKS

A. Socioeconomic viability

4.1 The economic analysis of the incremental activities (Component 1) to be financed by GEF was done using an aggregate approach relying on simulations using the Social Accounting Matrix (SAM) built during the preparation of the project. The main aim of investments in this component, as well as of investments in sewerage treatment plants contemplated for a few towns in Utila and Guanaja, is to preserve the natural base of the Islands, and particularly the coral reefs. These resources support most of the economic activities of the islands by supporting the tourism, fisheries and great part of the real state businesses. In the absence of a precise relation between degree of preservation of the natural base and these three activities (influx of tourists, fish production, demand for real state), a relation very difficult to establish in a quantitative manner, a simulation approach was used.

4.2 A conservative reduction of 10% in the influx of tourists, spread among the three tourist groups in the same proportion of their share of tourists' expenditures, was simulated using the SAM and the difference in Gross Island Product was estimated. It is believed that continued degradation of the natural resource base would have a much larger impact in the tourism industry, and would impact as well the production of coral reef related fish and the demand for real state. The last two effects were not included in the simulation making it an even more conservative estimate.

4.3 Results of the simulation show that for a reduction of US$5.45 million in tourism receipts in Roatán alone (10% of total), Roatán's GIP would fall by an estimated US$3.26 million, Roatán's tax receipts would fall by US$120,972 and income to the rest of Honduras would decrease by US$1.2 million annually.[13]

4.4 Investments of Component 1, valued at market prices, are in the order of US$3.7 million. Investments in sewerage treatment plants for towns in Guanaja and Utila and for the José Santos Guardiola landfill are in the order of US$1.8 million, and annual operation and maintenance costs of the protection system to be implemented, including existing and new sewerage treatment plants, are in the

[13] Increments in GIP translate into producer surplus as long as opportunity costs of factors are zero. In the case of the Bay Islands there is a low opportunity cost of increments to the labor force so GIP increments translate into welfare gains to a great extent.

order of US$0.5 million dollars. When compared to the potential losses as estimated by the SAM model, the baseline and incremental activities proposed for the consolidation of the PMAIB, including those activities aimed at ecosystem management and biodiversity conservation, represent an economically viable investment package.

B. Financial viability

4.5 To ensure the financial sustainability of the Program, the Bay Islands Conservation and Protected Areas Fee will be established as an environmental surcharge charged as a single general entrance fee for the departmental system of protected areas to those who are deriving the most benefit from the Islands and its environmental setting in the shortest period of time—the tourists. A special fund will be established to receive the revenues collected from the fee. A study was undertaken during project preparation to determine the operational aspects of the fund and an accompanying business plan, both of which are nearing completion and would be ready for implementation within the first two years of execution of the GEF program. Using a conservative estimate of a US$10.00 entrance fee and projecting revenues and costs over 10 years, the study has demonstrated that recurrent costs of the Program will be 50% covered starting the year 2005 and 100% covered starting 2008. The resources will be destined primarily to finance: (i) operation of the protected area system; (ii) recurrent costs for operation of the Technical Unit; (iii) provision of a subsidy to cover operating costs (particularly energy costs) for wastewater treatment facilities in excess of local capacity to pay for such services; and (iv) future investments in environmental management approved by the Commission. During project implementation, the Executive Commission and its Technical Unit will analyze other appropriate financing mechanisms, including: development impact fees charged to developers based on the value of new construction on the Islands; well-drilling/water rights fees; tax breaks for conservation easements in critical watershed, coastal or wetland area, and for technologies to save energy and water; and a schedule of charges for licenses, permits and fines. Together, these mechanisms should generate funds for continuing environmental management activities beyond the life of the five-year Program.

C. Environmental and social viability

4.6 Overall, the operation will have a positive environmental impact associated with measurable results in terms of: (i) increased local capacity for environmental management; (ii) consistent reporting on environmental trends and land use change; and (iii) on-site protection and restoration of globally significant coastal and marine ecosystems, including habitat for several endemic species; (iv) reductions in discharges of untreated wastewater and sedimentation rates; and (v) improved sustainable allocation of groundwater resources. Specific indicators have been selected relating to water quality, coral reef health, forest and mangrove cover and rates of land use change for which data will be collected as part of the field monitoring to be financed by the Program (see Annex B). The

comprehensive environmental information system established in 2000 provides the baseline against which performance will be periodically reviewed, with reporting to be part of the annual 'Sustainable Tourism Report Card'.

4.7 Social benefits will accrue from improved access to safe drinking water and wastewater treatment, particularly in the most isolated and poorest communities. Residents will also benefit from improved municipal services and access to more efficient and reliable property registration. Modernization of the departmental property registry will allow land owners to register their titles more efficiently and, in time, will improve access to credit for local investment. Other social benefits such as reduced resource use conflicts are expected from the shift towards a more inclusive institutional arrangement for environmental management.

4.8 The Program will not result in significant or foreseeable adverse environmental or social impact due to the nature, scale and location of construction and post-construction activities. Preventive and mitigation measures, both substantive and process-oriented, have been incorporated to the specifications for investments. An Environmental and Social Management Proposal (ESMP) was prepared for the loan and was approved.

D. Risks

4.9 The following issues received special attention during preparation of the operation. The first issue was the capacity of all four municipalities to coordinate their actions and to reach an agreement with the central government on the establishment of a sustainable arrangement for environmental management. To address this issue and minimize the risk of future conflicts, all municipalities received technical assistance and strengthening through a technical operation (ATN/KB-7787) aimed at building local ownership in the permanent, decentralized program. In addition, SECTUR undertook a systematic dialogue with municipalities and civil society organizations on their expectations for a cooperative mechanism. This effort culminated in the creation of the Executive Commission for Sustainable Tourism of the Bay Islands that includes all four municipalities, the local private sector and key representation from central government. To further mitigate risks during execution, the Commission will receive technical assistance in carrying out a common work program and in establishing the financial mechanism that will ensure the sustainability of the environmental management program.

4.10 During the course of preparing the operation, the uncertainty in projecting growth and urban development trends in the Bay Islands arose as an important theme for environmental management. A study was undertaken during project preparation of the factors underlying economic growth and land use changes in the archipelago.[14] In addition to improving projections of future demand for services,

[14] Economic Study of the Bay Islands. Edward Taylor, Antonio-Yunez-Naude. September, 2002.

the results of the study will be used to build capacity within the Executive Commission for Sustainable Tourism of the Bay Islands and the municipalities to analyze the full economic implications of growth on sustainable tourism and environmental quality.

4.11 The Bay Islands display the characteristics common to 'intermediate-impact' tourism destinations: migration rates leading to increasing resource use conflicts; labor and capital markets shifting from traditional pursuits to tourism; and tensions as traditional views are threatened.[15] These circumstances can lead to polarized views on environmental quality objectives, biodiversity conservation and proposed developments. Nonetheless, the islands are characterized by a strong sense of cultural identity, closely linked to its historical roots and maintained by long-standing community networks organized along ethnic and religious groups. These networks represent vital communication channels that were used both during preparation of the operation and for the design of the public outreach and participation strategy.

[15] J. McElroy, 2002. The Impact of Tourism in Small Islands: a Global Comparison. *Tourism, Biodiversity and Information.*